

MYSORE

*** AGRICULTURAL ***

*** CALENDAR ***

1923



DEPARTMENT OF AGRICULTURE
MYSORE

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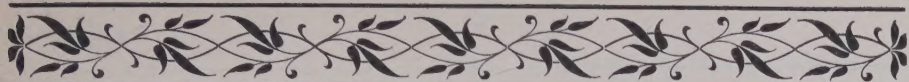
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MYSORE AGRICULTURAL CALENDAR, 1923.



THE MYSORE AGRICULTURAL AND EXPERIMENTAL UNION.

The Mysore Agricultural Department is very proud of the way in which the raiyats and landholders of the State are co-operating with it in furthering the work of agricultural improvement in Mysore. Without this co-operation, such work would be quite impossible. There are probably about 30,000 agriculturists in the State who are now carrying out on their own lands some one or more of the department's recommendations.

In addition to this large unorganised body of agriculturists we have a much smaller number who have banded themselves together with the definite object of testing on their land improvements which have been recommended by the agricultural department. These men form the Mysore Agricultural and Experimental Union. The union now consists of 290 members of whom 202 are non-officials. The members have during the past year carried out 91 tests of such varied improvements as new varieties of ragi, groundnut, cotton, castor and sugar-cane, new implements, and new manures especially for sugar-cane. The union has also taken up the question of fodder preservation and the improvement of sheep in the State. There are a very large number of other recommendations of the agricultural department which remain to be tested. New methods for the control of insect pests and plant diseases have to be tried on an increased scale and much work remains to be done on the testing of new varieties of crops, manures and methods of cultivation. The union therefore needs a very much larger number of active members than it has at present and I can think of no more practical way in which intelligent agriculturists can gain information valuable for themselves and their neighbourhood than by joining our experimental union.

The union in addition to its practical work on the land conducts a journal which is published in both Kannada and English. This paper compares favourably with any other agricultural paper in India. It contains an immense amount of information useful to any agriculturist in the State.

Finally the union holds an annual meeting in Bangalore at which the work done during the previous year is discussed and plans are made for the next year's operations. This annual meeting includes a field day on the Hebbal farm at which the members are the guests of the agricultural department. Members are conducted over the farm by the staff and all the work being done there is explained to them. The field day that was held on the 11th November 1922 was a most successful

Holidays	English Dates	Days of week	Chandramana Dates	Tithies in Ghaligies and Vighaligies	Nakshatrams in Ghaligies and Vighaligies
G.	1	Monday ..	13	Trayodasi ... 3 41	Rohini ... 5 11
	2	Tuesday ..	14	Chaturdasi ... 4 45	Mrigasira .. 7 34
	3	Wednesday	15	OPournami ... 4 12	Aridra ... 9 21
	4	Thursday ..	1	Padyami ... 3 14	Punarvasu .. 9 6
	5	Friday ...	2-3	Bidige ... 1 3	Pushya ... 8 55
	6	Saturday ..	4	Tadige ... 56 22	Aslesha ... 6 56
	7	Sunday ..	5	Chouti ... 53 22	Makha .. 4 1
	8	Monday ...	6	Panchami ... 48 2	Pubba ... 0 18
	9	Tuesday ..	7	Shashti ... 42 3	Uttra ... 55 48
	10	Wednesday	8	Saptami .. 35 46	Hasta ... 51 29
	11	Thursday ...	9	Ashtami ... 29 36	Chitta ... 46 50
	12	Friday ...	10	Navami .. 23 16	Svati ... 42 32
	13	Saturday ...	11	Dasami ... 17 36	Visakha .. 38 48
	14	Sunday ..	12	Ekadasi ... 12 38	Anoradha .. 35 49
	15	Monday ...	13	Dvadasi ... 8 34	Jeshta ... 33 49
	16	Tuesday ..	14	Trayodasi ... 6 31	Moola .. 32 50
	17	Wednesday	30	Chaturdasi .. 4 18	Poorvashadha... 32 30
G.				● Amayasya ... 3 16	Uttrashadha ... 33 31
	18	Thursday ...	1	Padyami ... 3 29	Magha ... 35 49
	19	Friday ...	2	Bidige .. 5 0	Dhanishta ... 39 16
	20	Saturday ...	3	Tadige ... 7 45	Satabhisha ... 43 57
	21	Sunday ...	4	Chouti .. 11 42	Poorvabhadra... 49 36
	22	Monday ...	5	Panchami ... 16 24	Uttrabhadra .. 55 56
	23	Tuesday ...	6	Shashti ... 21 44	Revati .. 60 0
	24	Wednesday	7	Saptami .. 27 13	Revati .. 2 45
	25	Thursday ..	8	Ashtami ... 32 28	Asvini .. 9 10
	26	Friday ..	9	Navami ... 36 57	Bharani .. 15 27
H.	27	Saturday ..	10	Dasami ... 40 30	Krittike .. 20 5
	28	Sunday ...	11	Ekadasi .. 42 45	Rohini .. 24 0
	29	Monday ...	12	Dvadasi ... 43 41	Mrigasira .. 26 46
	30	Tuesday ...	13	Trayodasi ... 43 19	Aridra .. 28 13
	31	Wednesday	14	Chaturdasi ... 41 44	Punarvasu .. 28 25

MONTHLY NOTES.

Where tanks have received a good supply of water in the rains of the north-east monsoon and on lands under well cultivation, the field will soon be sown with *vaisakhi* or summer paddy. Transplant your paddy in preference to sowing it broadcast. Considerable saving in seed can be effected especially if the seedlings are planted in twos and threes rather than in bunches of several seedlings. The water in the tanks which in the coming dry weather is liable to much loss by evaporation can be used economically by this method. Where water has to be raised from great depths, such saving is

Yogams	Feasts, Festivals, Government Holidays and Rainfall according to Nakshatrams.	Dates of Cattle Fairs, Cattle shows and Agricultural Exhibitions and other useful notes.
DUBHI.		
SUDDHA.	New year's day ..	
Sukla ..	*Moogoorbandi Car Festival	
*Bramha ..	T. Narsipur Taluk.	
*Mahendra ..	*Aridrotsavam ..	Pattanayakanahalli, Sira Taluk.
BAHULA		
Vaidruti ..	Poorvashadha Rain 3rd.	
Vishkambha ..	pada.	Hennagara, Anekal Taluk.
Preeti ..		
Ayushman ..	Poorvashadha Rain 4th	
Sowbhagya ...	pada Chappalamma Jatra Tornahalli.	Tornahalli, Malur Taluk.
Sobana Atiganda ..		
Sukama ..	Uttrashadha Rain 1st pada	
Dhriti ..		
Svola ..		
Ganda ..	Uttrashadha Rain 2nd pada	
Vridhi ..	Uttarayana Punyakala.	1. Sivaganga, Nelamangala Taluk. 2. Nagalamudike, Pavagada Taluk.
*Dhruva ..	Pongal.	
Vyaghata ..	*Ranganathaswami Car	
*Harsha ..	Festival Seringapatam.	
SUDDHA	*Uttrashadha Rain 3rd pada	*Chunchanakatte, Yedatore Taluk.
Vajra ..	Sri Mallikarjunaswami	Mudaktore T. Narsipur taluk
Siddhi ..	Car Festival Mudaktore.	From 18-1-23 for 15 days.
Vyati pata ..	*Uttrashadha Rain 4th pada	
*Varigha ...	*Nallagangammana Jatra.	Kallagurki Srinivasapur Taluk.
*Parigha ..	*Sravana Rain 1st pada ..	
*Siva ..	Chitravati Subramanya	Tavarekere, Sira Taluk Sri
Siddha ...	Swami car Festival Hone-	Ranganathaswami Jatra
Siddha ..	nahalli.	and Cattle Fair.
	Ratha Sapthami H. H. the	Cattle Fair Chitravati Hon-
Sadhya ..	Maharaja's Installation	nenahalli, Chikballapur
*Subha ...	day Ranganatha swami	Taluk.
Sukla ..	Car Festival Seringa—	1. Hemagiri Krishnaraj-
Bramha ...	patam.	pete Taluk.
Mahendra *Vaidruti ..	*Madhya Navami ..	2. Kyamenahalli Kortagere
Vishkambha ..	Sravana Rain 2nd pada ..	Sub-taluk.
Preeti ..	*Sravana Rain 3rd pada ..	

an important consideration. Transplanting will moreover give a better yield than broadcasting. Special manures for paddy are stocked in the Inspectors' depots; these are worth a trial.

Sow *bili jola* on black cotton soil in tank beds with no water in them and under tanks with limited supplies of water, so as to have good fodder for cattle during the dry months.

Dry land fields should be left in a loosely stirred condition from now onwards through the hot weather till the beginning of the rains. Wherever the soil is soft enough to plough, it should be ploughed. If too hard for the plough, the disc-harrow should be used for the purpose. *Vide* notes under December for details.

one and members have been most enthusiastic in their expressions as to its usefulness.

Membership in the union costs but Rs. 3 a year exclusive of an entrance fee of Rs. 3 and the advantages to the members undoubtedly far exceed in value this small sum. I wish most strongly to urge upon the agriculturists of the State the importance of joining the union. It is a thoroughly democratic organization whose single object is the improvement of our agriculture.

Applications for membership and for sample copies of the journal should be made to the Secretary, Mysore Agricultural and Experimental Union, Bangalore.

SUGAR-CANE MILLING CO-OPERATIVE SOCIETIES.

Among the many purposes for which non-credit agricultural co-operative societies can be formed with advantage in our State, the operation of jaggory boiling by the joint ownership and use of sugarcane crushing mills and pans seems to offer promise of success. The outfits referred to are not large scale machinery like, power-driven mills and the elaborate boiling arrangements that go with such, but only the ordinary set consisting of the bullock-driven sugar-cane mill and the one or couple of boiling pans. There is in the operation of jaggory boiling in our villages nearly all the elements needed for the successful working of a co-operative society. Firstly, the work of jaggory boiling in a village is one which needs a great deal of co-operation and even in these days when much of the co-operative spirit is disappearing, jaggory boiling is about the one agricultural operation, where it still continues to be in evidence, solely because without joint effort the work will be impossible. As a matter of fact, at the present time it is by means of a cleverly organised system of co-operative labour raiyats get through this work in the cheapest, and probably the only possible way in which it can be got through. Secondly, the mill and pans required are brought on hire from merchants who make a business of hiring out such outfits. A mill and a pair of pans will, of course, be too much for an ordinary raiyat to own, not only because it may be considered too costly for his means, but also because he needs the outfit only for a few days' use in the year. A number of raiyats who co-operate at a milling shed, however, grow enough cane between themselves to need the use of an outfit practically for a season, and this will therefore justify the ownership of a mill and pans at least jointly. The profits now being made by the merchant who hires out the mill will then go to the men who contribute to these profits, which is the very circumstance in which such co-operative societies find their incentive. Thirdly, the use of the ordinary bullock mill and pans is quite a familiar operation to the raiyat; there is nothing new or experimental about it as may be in the case of other implements that may be recommended for co-operative ownership like a threshing machine or a ginning machine or the use of power-driven outfits for this same cane milling work. It is simple and is thoroughly well-known to the raiyat. There is therefore no likelihood of failure arising from this cause. The advantages to the raiyats by thus combining to own an outfit will be so striking that the society may be gradually developed not only to own other implements like improved ploughs, cultivators and so

on, for hire but also to take up other items of agricultural work, in the course of time.

For these reasons, the formation of such co-operative societies is worth encouraging. In the Kolar district, two such societies have been formed with the assistance, of course, of the department of co-operative societies. One society has now worked through two jaggory boiling seasons and the other has just finished one season. The working so far has been quite as satisfactory as may be inferred from the considerations described above. It is proposed to form more such societies in suitable villages before the next season commences.

The details of the working which are very simple are these:—

The society is composed of from twenty to thirty villagers who grow sugarcane every year generally. They purchase one Nahan sugarcane crushing mill and one or a couple of pans, from the agricultural department at a cost which may be put down between Rs. 400 and Rs. 500 according to the ruling price for these articles. This capital is raised either by the members taking fully or partly paid up shares to this value or by means of a loan, on the credit of the society in the way usual with other societies in the State. At milling time, they use the outfit according to the order which they usually decide upon. There is no fear of there being wrangling and consequent misunderstanding over the order of service, as even now in the case of a mill hired by a number of people, they get through the work smoothly and on a well-understood system. Each member pays the hire which he would usually pay on a hired outfit. After the members have finished their milling, the outfit is hired out to non-members, for a slightly higher rent. The proceeds thus earned are apportioned at the end of the season, for repayment of the loan and for repairs. If the outfit was purchased from borrowed capital then the bulk of the proceeds goes to the extinguishing of the loan which of course is the first charge upon the earnings; judging from the results of one of these societies the loan can be discharged in full in the course of five years, because this society paid Rs. 100 out of its profits in one year, towards principal alone. After this time the mill and pans became the property of the members and all the proceeds from hire become the profit of the members, except such portion as may be set apart to cover depreciation and repairs of the outfit. If on the other hand the capital was raised by the members subscribing it in full at the outset, then of course the members save to themselves the interest, which would go to the central bank. In either case the profits will be so tangible as to give permanence to the society and encourage it to take up other lines of agricultural work also into its scope.

METHOD OF PREPARING THE CASEIN BORDEAUX MIXTURE AGAINST SUPARI KOLEROGA.

It would be of interest to the areca garden owners of malnad areas to know that casein Bordeaux mixture can be used against the kole-roga of supari with quite as much efficacy as the resin-soda Bordeaux mixture, which is being used on a large scale at present. The casein mixture is more easily prepared than the resin mixture, the preparation of which involves the boiling of the resin and soda to the proper consistency. An additional advantage is that the cost of the mixture is

Holidays	English Dates	Days of week	Chandramana Dates	Tithies in Ghaliges and Vighaliges	Nakshatrams in Ghaliges and Vighaliges
					MAGHA
	1	Thursday ...	15	O Pournami 38 56	Pushya ... 27 33
					MAGHA
	2	Friday ...	1	Padyami ... 35 11	Aslesha ... 25 37
	3	Saturday ...	2	Bidige .. 30 36	Makha ... 22 53
	4	Sunday ...	3	Tadige .. 25 20	Pubba ... 19 27
	5	Monday ...	4	Chouti .. 19 43	Uttra ... 15 35
	6	Tuesday ...	5	Panchami ... 13 45	Hastha ... 11 28
	7	Wednesday ..	6	Shashti ... 7 48	Chitta ... 7 16
	8	Thursday ...	7-8	Saptami .. 2 1	Svati ... 3 15
				Ashtami ... 54 20	Visaka ... 56 4
	9	Friday ...	9	Navami .. 51 27	Anoradha ... 56 6
	10	Saturday ...	10	Dasami ... 47 6	Jeshta ... 53 43
	11	Sunday ..	11	Ekadasi ... 44 0	Moola ... 52 14
	12	Monday ...	12	Dvadasi ... 41 54	Poorvashadha ... 51 49
G.	13	Tuesday ...	13	Trayodasi .. 40 55	Utrtrashadha ... 52 31
C.	14	Wednesday ..	14	Chaturdasi ... 41 18	Sravana ... 54 30
	15	Thursday ...	30	● Amavasya ... 42 43	Dhanishta ... 57 42
					PHALGUNA
	16	Friday ...	1	Padyami ... 45 32	Satabhisha ... 60 0
	17	Saturday ...	2	Bidige ... 49 27	Satabhisha .. 2 49
	18	Sunday ...	3	Tadige ... 54 15	Poorvabhadra .. 8 23
	19	Monday ...	4	Chouti ... 59 40	Utrabhadra ... 14 20
	20	Tuesday ...	5	Panchami .. 60 0	Revati ... 20 55
	21	Wednesday ..	5	Panchami ... 5 19	Asvini ... 27 25
	22	Thursday ...	6	Shashti ... 10 16	Bharani ... 33 31
	23	Friday ...	7	Saptami .. 14 37	Krittike ... 38 51
	24	Saturday ...	8	Ashtami ... 16 53	Rohini ... 43 11
	25	Sunday ...	9	Navami ... 20 3	Mrigasira ... 46 12
	26	Monday ...	10	Dasami ... 20 49	Aridra ... 48 0
	27	Tuesday ...	11	Ekadasi .. 20 21	Punarvasu ... 49 40
	28	Wednesday ..	12	Dvadasi .. 18 34	Pushya ... 47 50

MONTHLY NOTES.

In making preparations for threshing, it is well to remember that this slow and tedious work can be done much more quickly and with less trouble and worry by adopting better methods than those commonly employed. Firstly, a stone threshing roller $2\frac{1}{2}'$ long by $2'$ high of the kind now coming into use in

Yogams	Feasts, Festivals, Government Holidays and Rainfall according to Nakshatrams	Dates of Cattle Fairs, Cattle Shows, and Agricultural Exhibitions and other useful notes
SUDDHA.		
Ayushman ..	Vyasa Pournami, Sri Gangadhareswara Swami Car Festival, Gavipur, Bangalore Taluk	(1) Vakkalere Kolar Taluk. (2) Channagiri Town, Channagiri Taluk
BAHULA.		(3) Harihar Town, Harihar Sub-Taluk.
Sowbhagya ...	Sravana Rain 4th pada.	(4) Bettadapur, Hunsur Tk.
Sobhana ..		(5) Tala Koil Betta, Sidlaghatta Taluk.
Atiganda ...		(6) Anthraghatta, Kadur Taluk.
Sukarma ..	αDhanishta Rain 1st pada, Hala Swami Jatra, Ramapur, Honnali Taluk.	Vasanthapur, Bangalore Taluk.
Dhriti ..		αSri Srinivasa Swami Car Festival and Cattle Fair at Karighatta, Seringapatam Taluk.
Soola ...		
Vridhhi ..		
Dhruva ..	Dhanishta Rain 2nd pada.	
Vyaghata ..		
Harsha ..		
Vajra ...	Dhanishta Rain 2nd pada.	
Siddhi ..	Maha Siva Ratri, Sri Bhoga Nandeswara Swami Car Festival, Nandi.	Avani, Mulabagal Taluk. Nandi, Chikkaballapur Taluk. Sulekere Channagiri Taluk.
Vyatipata ...	Ash Wednesday.	
Varigha ..	Dhanishta Rain 4th pada.	
SUDDHA.		
Parigha ...		
Siva ..		
Siddha ..	Satabhisha Rain 1st pada.	
Sadhya ..		
Subha ..	Sri Kasi Visweswara Swami Car Festival.	Yedwar, Srinivasapur Taluk.
Sukla ..		
Bramha ...	Satabhisha Rain 2nd pada.	Doddasaggere. Koratagere Sub-Taluk. Cattle fair for 7 days.
Mahendra ..	Sri Narasimha Swami Car Festival.	
Vaidruti ...		
Vishkamba ...	Satabhisha Rain 3rd pada.	
Preeti ...		
Ayushman ...	Basvanna Devaru Jatra.	Nandagudi, Malebennur Hobli, Harihar Sub-Taluk.
Sowbhagya ...	Satabhisha Rain 4th pada.	

many parts of the State is a very good appliance and is well within the means of the ordinary raiyat. It does the work quicker and with less labour, and can be used for threshing ragi, jola, avare, togari, or hurali. Those wishing to plant the now popular Red Mauritius and other new varieties of sugarcane should plant them this month if not earlier, *Vide* notes under November.

reduced by nearly a rupee per acre. Demonstrations of the effect of casein spraying were conducted last year in 15 gardens, with the result that the garden-owners intend taking up the work themselves on a large scale during this monsoon. Though the casein-mixture seems to have impressed the garden owners of its efficacy in preventing the koleroga, the department has been using great caution in advising people not to take up large areas to be sprayed with this mixture in preference to the sure remedy, the resin-Bordeaux-mixture.

The preparation of the casein mixture is as follows:—

I (a) 5 lbs. of copper sulphate to be dissolved in 12 gallons or 48 measuring seers of water.

(b) 5 lbs. of burnt lime to be slaked in 12 gallons or 48 measuring seers of water.

Pour (b) into (a) stirring all the while.

II (c) $\frac{1}{2}$ lb. of casein soaked in $\frac{1}{2}$ gallon or 2 measuring seers of water.

(d) $\frac{1}{2}$ lb. burnt lime slaked in $\frac{1}{2}$ gallon or 2 measuring seers of water.

Pour (d) into (c) and stir well till the casein dissolves and a syrupy mixture is obtained. This will take about 10 minutes. Add II to I stirring the solution all the time.

When this solution is sprayed on to the areca bunches it dries up in about 40 minutes, in much less time, if there is a wind blowing, and forms a film on the surface of the nuts, which is not washed off even by the heaviest downpour of rain in the ghat areas of the malnad. The casein mixture has a fine spreading quality on the surface of the nuts, but it does not show up the bluish white colour so well as the resin-Bordeaux mixture does. Experiments are still under way to determine the minimum quantity of casein that can be successfully used to withstand the heavy rains.

IMPROVEMENT OF SEED BY THE FARMER.

The improvement of seed can be undertaken by the farmer and if systematically carried out, the increased yield obtained by the farmer more than pays for the small labour involved in obtaining it. Seed improvement can be effected in many ways. The improvement of seed by hybridisation and selection to raise the yielding capacity or giving any desirable character as disease-resistance or erect straw is a piece of work that cannot be undertaken by the farmer under the existing state of conditions but there are other ways in which he can improve seed by the elimination of such things as would tend to waste.

The purification of seed from weeds is a very necessary item in this work. The weed seeds gain an access to the cultivated fields mainly in two ways. One is by the farm-yard manure that is put into the soil. The seeds of grasses and other plants on which cattle feed often pass uninjured through the stomach and the digestive tracts of the cattle and come out into the farm-yard manure. If the farm-yard manure is well made, the heat of fermentation destroys the vitality of many of these seeds and this is an additional reason why farm-yard manure should be properly made.

Most agricultural seed as it is obtained from the farmers contains

other weed seeds and when the main crop is sown, the weed seeds get a lodging in the soil and grow at the expense of the food material stored in the soil which can be made use of by the crop. At times the weeds get such an upper hand that they compete with the crop for the moisture in the soil and sometimes the land is not harvested at all because the crop obtained is so little. At other times the weed seeds may be derived from poisonous plants and be responsible for disorders and illness in cattle or grow as parasites on the crop as striga on ragi. Either way they are undesirable and can be got rid off by proper methods. Winnowing is a very satisfactory method which will get rid of seeds smaller than the crop seed. After careful winnowing the seeds may be selected by the salt water method to ensure that all the seed sown is healthy and plump and each of them will give rise to a seedling. Proper weeding of the plot set apart for seed purposes, especially just before the weeds have formed flowers, removes a great source of contamination. Growing the crop under conditions that tend to admit light and air through the growing crop and draining the land sufficiently to reduce the moisture which is so conducive to fungal growth, is a useful precaution.

Finally comes the question of gathering seed which is free from disease. A single diseased seed may mean a loss of crop from a whole plant as in some forms of smut on jola. At other times, it means not only the loss of the particular plant in question but a spread of infection to other plants standing in the field by irrigation water or otherwise; and lastly comes the question of infecting the soil itself making it unfit for the cultivation of the crop in question as the red rot of sugar-cane; the ring disease of potatoes caused by a small organism so infects the soil that several plants belonging to the same natural order such as brinjals, tomatoes and chillies cannot be grown on the plot. Elimination of diseased seeds and setts is very important in minimising losses from disease.

Healthy plants which are the outcome of healthy seeds are likely to yield a better quality and quantity of grain. Freedom from weeds and foreign matter enhances the market value of the grain and if the methods suggested above are practised, the farmer will in time have a stock of improved seed of which he can justly be proud. The labour involved is very little considering the benefits derived. The methods suggested above can also be used in the case of selected seed originally sent by the agricultural department because they tend towards elimination of contamination and help towards maintaining the original seed in as pure a state as possible.

THE SUGAR-CANE BORER.

The most serious of the sugar-cane pests in India is the borer so called because the insect bores into the growing shoot of the young cane. The effect of the attack is seen in the shoot dying up and appearing withered or dry in contrast to the healthy green leaves formed earlier. In consequence of the death of the shoot other shoots may spring up but these are not so vigorous and are so late in coming that the maturity of the crop is retarded and is not uniform. Where the pest is bad the whole crop may be lost but this is rare the heaviest damage being usually not more than 50 per cent of the early shoots.

Holidays	English Dates	Days of week	Chandramana Dates	Tithies in Ghaliges and Vighaliges	Nakshatrams in Ghaliges and Vighaliges
PHALGUNA					
H.	1	Thursday ...	13	Trayodasi ... 15 42	Aslesha ... 46 4
	2	Friday ...	14	Chaturdasi .. 2 52	Makha ... 43 24
	3	Saturday ...	15	OPournami ... 7 13	Pubba ... 40 4
PHALGUNA					
	4	Sunday ...	1-2	Padyami ... 1 57	Uttra ... 36 13
				Bidige ... 54 35	
	5	Monday ..	3	Tadige ... 50 28	Hasta ... 32 9
	6	Tuesday ...	4	Chouti ... 44 20	Chitta ... 27 54
	7	Wednesday	5	Panchami ... 38 27	Syati ... 23 48
	8	Thursday ...	6	Shashti .. 30 0	Visakha ... 20 1
	9	Friday ..	7	Saptami ... 27 39	Anoradha ... 16 48
	10	Saturday ..	8	Ashtami .. 23 53	Jeshta ... 14 16
	11	Sunday ...	9	Navami .. 20 44	Moola ... 12 36
	12	Monday ...	10	Dasami .. 18 30	Poorvashadha ... 11 58
	13	Tuesday ..	11	Ekadasi .. 17 39	Uttrashadha ... 12 29
	14	Wednesday.	12	Dvadasi .. 17 54	Sravana ... 14 24
	15	Thursday ..	13	Trayodasi ... 19 50	Dhanishta ... 17 22
	16	Friday ...	14	Chaturdasi ... 22 21	Satabhisha ... 21 25
	17	Saturday ...	30	●Amavasya .. 26 14	Poorvabhadra ... 26 37
RUDHI					
CHAITRA					
G.	18	Sunday ...	1	Padyami ... 32 24	Uttrabhadra .. 34 10
	19	Monday ...	2	Bidige ... 37 42	Revati ... 40 6
	20	Tuesday ...	3	Tadige .. 41 49	Asvini ... 46 7
	21	Wednesday.	4	Chouti ... 46 21	Bharani ... 51 58
	22	Thursday ...	5	Panchami ... 50 19	Krittike ... 57 58
	23	Friday ..	6	Shashti ... 53 34	Rohini ... 60 10
	24	Saturday ...	7	Saptami .. 55 51	Rohini ... 1 39
	25	Sunday ..	8	Ashtami ... 56 58	Mrigasira ... 5 11
H.	26	Monday ..	9	Navami .. 56 52	Aridra .. 7 36
	27	Tuesday ...	10	Dasami .. 55 32	Punarvasu ... 8 50
	28	Wednesday.	11	Ekadasi ... 51 42	Pushya ... 8 51
	29	Thursday ...	12	Dvadasi .. 48 58	Aslesha ... 7 40
G.	30	Friday ...	13	Trayodasi ... 44 8	Makha ... 5 25
M.	31	Saturday ...	14	Chaturdasi ... 38 37	Pubba ... 2 14
					Uttra ... 56 12

MONTHLY NOTES.

The month for cane milling. Note that with the same amount of cane, a bigger money return can be obtained by the use of better mills which extract more juice, and by better methods of boiling jaggery whereby a firm and light coloured jaggery fetching a higher price can be got. Use the Nahan bullock mill, or, if possible, an engine-driven mill for milling. Use red litmus paper to judge liming and a good skimming ladle to remove scum thoroughly.

Yogams	Feasts, Festivals, Government Holidays and Rainfall according to nakshatrams	Dates of Cattle Fairs, Cattle Shows and Agricultural Exhibitions and other useful notes
SUDDHA	^a Holi Feast.	
Sobhana, Atiganda	^b Sri Narasimha Swami Car Ftl. Deva Rayadoorga.	^b (1) Deva Raya Durga, Tumkur Taluk
^a Sukarma ...	Sri Chenna Raya Swami	(2) Suggenaballi, Magadi Taluk.
^b Dhriti ...	Car Festival Agara	(3) Agara, Bangalore Taluk
BAHULA	^c Poorvabhadra Rain 1st pada. Someswaraswami	(4) Nandihalli, Srinivaspura Taluk
^c Soola ...	Car Festival Kolar.	(5) Mittimari, Bagepalli Taluk
Ganda ...	^d Poorvabhadra Rain 2nd pada.	Bannerghatta, Anekal Taluk
Vridhi ...	^e Sri Champa Kadhama	Harihar Town, Harihar Sub-Taluk
^d Dhruva ...	Car Festival. Sangameswara swami Jatra.	
Vyaghata	^f Poorvabhadra Rain 3rd pada	
^e Vajra ...	^g Poorvabhadra Rain 4th pada	
^f Sidhi ...	^h Sri Maddooramman Jatra Huskur.	Cattle Fair-Huskur, Anekal Taluk
Vyatipata	ⁱ Uttrabhadra Rain 1st pada	
Varigha	Solar Eclipse.	
^g Parigha	^j Lunar New year's day	
Siva ..	^k Sangameswara Swami Jatra Kudli	Cattle Show Kudli, Shimoga Taluk for 10 days
Siddha ..	^l Uttrabhadra, Rain 2nd pada Gangamma Jatra	Cattle fair Burdagunte, Sidlaghatta Taluk
ⁱ Sadhya	^m Eralappana Jatra Van rasi	Van Rasi, Kolar Taluk
^j Subha ...	ⁿ Sri Thimmaraya Swami	Cattle fair, Anekal Town
RODGARI.	Car Festival, Uttrabhadra	
SUDDHA	Rain 3rd pada.	
^j Sukla ..	^o Sri Rama Navami Sri Anjaneya Swami Car Ftl.	Muddenahalli, Chennagiri Taluk
^k Brahma	^p Uttrabhadra Rain 4 pada	Byrappanahalli Nelamangala Taluk
Mahendra	Sri Anjaneya Swami Car Festival	
Vaidruti	Smatha Ekadasi Sri Venkata Ramana Swami	1Chikka Thirupati, Malur Taluk
^{lm} Vishkambha	Car Ftl. Chikka Thirupati	(2) Melur Sidlaghatta Taluk
Preeti ..	^q Vaishnava Ekadasi	Thirumale Magadi Taluk
ⁿ Ayushman	Revati Rain 1st pada Sri Ranga Natha Swami Car	From 29th to 3rd April 1923 Easter Holidays.
Sowbhagya	Ftl. Thirumale. Good F'day	Jalaganahalli Maloor Taluk
^o Sobhana	Sowrammana Jatra Jalaganhalli. Shab-e-Barat.	
^p Atiganda		
Sukarma		
^q Dhriti ..		
Soola ..		
Ganda		
Vridhi		

On dry land fields, the bulk of the local variety of cotton will be picked. It will pay to pick cotton clean and also to pick good cotton separately from worm-eaten, stained or otherwise dirty cotton.

On garden lands *i.e.*, under well cultivation, minor vegetable crops like beans, cucumber, maize, *etc.*, can be now put in, which will be removed in time to prepare and get the land ready for the main rainy season crop of irrigated ragi, chillies, or potatoes.

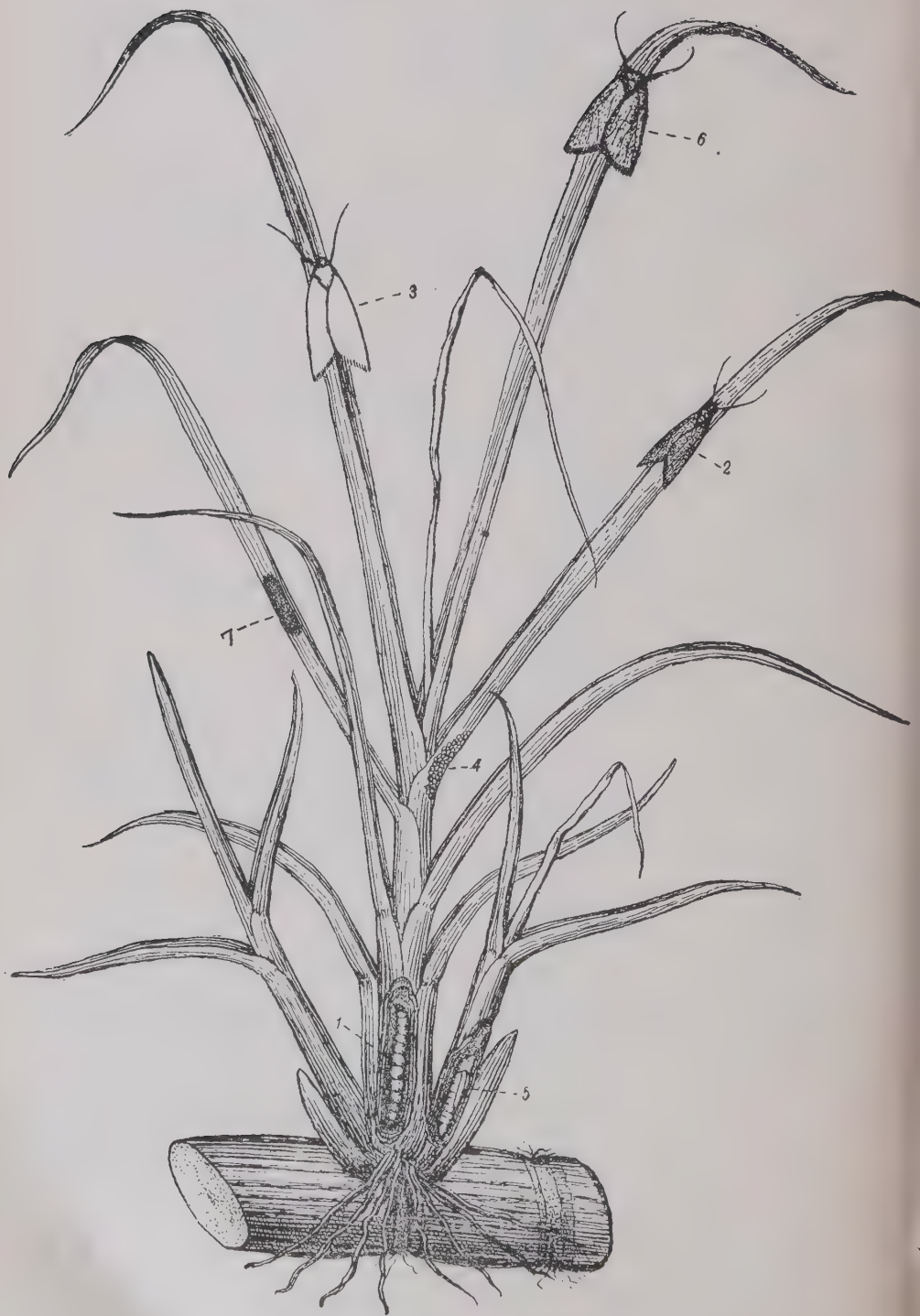


PLATE I.

The amount of damage caused by the insect in India annually has been estimated at Rs. 30,000,000.

The borer is a caterpillar. (Fig. 1). The adult is a moth (Fig. 2). There are several species of moths concerned all of them straw coloured more or less except one which is pure white (Fig. 3.) The life history of all these is similar and that of the most common will alone be briefly described here. The caterpillar of this is lightly pinkish and speckled all over. It is hatched out of flattened overlapping eggs laid by the moths usually on the under surface of the sugar-cane leaves or leaf base. (Fig. 4.) The caterpillars on hatching scatter each to enter a young shoot between the stem and the leaf sheath which it eats up or so damages that all growth ceases. A tunnel is made here extending far into the sett and the caterpillar may be detected inside. When full grown, it prepares a tunnel to the outside in the stem and then pupates. (Fig. 5). The moth, on emergence, has its passage out into the world ready made and flies out a shining straw coloured insect. (Fig. 1). The moths fly about the cane field at night, pair, and the female lays the eggs already described.

About the time of harvest a number of these moths emerge from the old cane or from infested tops that have been planted and fly to the young cane in the neighbourhood and start the pest there which continues off and on throughout the year on the tillerings that come up from time to time or on the tops of the cane.

It is difficult to reach the offending caterpillar and the eggs are too small for easy detection. Efforts on these lines made in the cane growing areas of the world have failed and they were repeated in Mysore with the same result. A new line of attack has been now followed in Mysore which has yielded very encouraging results. This consists in getting at the moths. They fly to the young cane at night and pass the day time in shelters such as grass, rubbish or crevices. Such shelters are not many in the young cane field, but exist in abundance on bunds, in trash in the old cane fields and bushes. If shelters are provided in the young cane itself the moths will pass the day time in these in preference to those farther off. All moths that attack cane and some others are caught this way. The white moth is an exception. This is, however, found conspicuous in the young cane and can be easily hand-picked, nor is it so serious as the others.

Cane growers may well adopt this simple safeguard. As soon as the young shoots are out of the ground, cane trash no more than what cane be drawn out by the hand may be placed in heaps in the field. The number and arrangements of these have not been finally fixed, but heaps twenty yards apart and in rows have been found satisfactory. In a ten acre plot there need be only two rows one near and along the bunds, the other towards the centre. Where the canes are in long narrow strips one row of heaps in each strip is necessary near the bund.

EXPLANATION OF PLATE I.

1. The sugar-cane borer inside the shoot.
2. Its parent, the straw coloured borer-moth.
3. The white borer-moth.
4. The eggs of the straw-coloured moth.
5. The pupa of the borer.
6. The moth of which the caterpillar attacks both sugar-cane and jola.
7. The egg mass of the white borer-moth.

Holidays	English Dates	Days of week	Chandramana Dates	Tithies in Ghaliges and Vighaliges			Nakshatrams in Ghaliges and Vighaliges	
M.	1	Sunday ..	15	O Pournami	32	1	Hastha	CHAITRA ... 53 57
	2	Monday ...	1	Padyami	... 25	58	Chitta	CHAITRA ... 49 19
	3	Tuesday ...	2	Bidige	... 19	31	Svati	... 44 47
	4	Wednesday	3	Tadige	... 13	19	Visakha	... 40 39
	5	Thursday ...	4	Chouti	... 7	31	Anoradha	... 47 7
	6	Friday ...	5-6	Panchami	... 2	34	Jeshta	... 34 39
	7	Saturday ...	7	Shasti	... 55	35		
				Saptami	... 55	10	Moola	... 32 47
	8	Sunday ...	8	Ashtami	... 53	27	Poorvashadha	... 32 18
	9	Monday ...	9	Navami	... 52	56	Utrashadha	... 33 4
	10	Tuesday ...	10	Dasami	... 53	39	Sravana	... 34 56
	11	Wednesday	11	Ekadasi	... 55	21	Dhanishta	... 38 0
	12	Thursday ..	12	Dvadasi	... 58	22	Satabhisha	... 42 6
	13	Friday ...	13	Trayodasi	... 60	10	Poorvabhadra	... 47 4
	14	Saturday ...	13	Trayodasi	... 2	17	Utrabhadra	... 50 39
H.	15	Sunday ...	14	Chaturdasi	... 6	33	Revati	... 58 37
	16	Monday ...	30	● Amavasya	11	8	Asvini	... 60 9
								VAISAKHA
	17	Tuesday ...	1	Padyami	.. 15	46	Asvini	.. 4 46
	18	Wednesday	2	Bidige	... 20	5	Bharani	... 10 33
	19	Thursday ...	3	Tadige	.. 24	0	Krittike	... 15 54
	20	Friday ...	4	Chouti	... 27	5	Rohini	.. 20 35
	21	Saturday ...	5	Panchami	... 29	15	Mrigasira	... 24 29
	22	Sunday ...	6	Shasti	... 30	15	Aridra	.. 27 5
	23	Monday ...	7	Saptami	... 30	0	Punarvasu	... 28 37
	24	Tuesday ..	8	Ashtami	... 28	33	Pushya	... 28 54
	25	Wednesday	9	Navami	... 25	50	Aslesha	... 27 59
	26	Thursday ...	10	Dasami	... 21	59	Makha	... 26 5
	27	Friday ...	11	Ekadasi	... 17	12	Pubba	.. 22 57
	28	Saturday ..	12	Dvadasi	... 21	36	Uttra	... 19 10
	29	Sunday ...	13-14	Trayodasi	.. 5	26	Hasta	... 14 54
				Chaturdasi	... 54	0		
	30	Monday ...	15	O Pournami	52	22	Chitta	... 10 21

MONTHLY NOTES.

The *pattapatti* variety of sugar-cane is a very superior local cane, both in the yield of cane per acre and in the quantity of sugar present in the juice; whenever possible, plant this variety in preference to others. But new varieties which are more vigorous and better yielding are now available. These are H. M. 544; H. M. 312; H. M. 310; Red Mauritius and J. 33-A. These should be planted from November to February, as they are likely to arrow about the month of November, and canes planted after February will not give a large tonnage owing to the cessation of growth after arrowing. Applications for seed setts should be made to the Deputy and Assistant Directors who will arrange to procure them from the centres nearest to the applicants.

Yogams	Feasts, Festivals, Government Holidays and Rain-fall according to Nakshatrams	Dates of Cattle Fairs, Cattle Shows and Agricultural Exhibitions and other useful notes
SUDDHA.		
^a Dhruva ..	^a Sri Dharmarayaswami Karga Festival, Bangalore City. Sri Prasanna Ven-	^a (1) Sravanabelagola, Channarayapatna Taluk.
BAHULA.		(2) Devarahalli, Channagiri Taluk.
^b Vyaghata ..	kataramanaswami Car Festival, Budikote, Bowringpet Taluk. Shab-e-	(3) Yeladoor, Srinivasapura Taluk.
^c Harsha ...	Barat.	(4) Varnasi, Kolar Taluk.
Vajra ...		(5) Anagode, Davangere Taluk.
Siddhi ..	^b Car Festival at Dodda Kurugod.	^b Cattle Fair for 8 days at Doddakurugod, Goribidnur Taluk.
^d Vyatipata ..	^c Revati rain, 2nd pada ...	^c Ronoor, Srinivaspur Taluk.
Varigha ...	^d Revati rain, 3rd pada ...	
Parigha ...	^e Revati rain, 4th pada, Sri Venkataramanaswami Car Festival.	
Siva ...	^f Asvini rain, 1st pada. Tamil New Year's Day.	
Siddha ...		
^e Sadhya ...	^g Asvini rain, 2nd pada ...	
Subha ..	^h Asvini rain, 3rd pada ...	
Sukla ...	ⁱ Sri Sankara Jayanti ..	
^f Bramha ..	^j Sri Ramanujacharya Tirunakshatram.	
Mahendra ..	^k Asvini rain, 4th pada ..	
Vaidruti ..	^l Sri Kothandaramaswami Car Festival.	Srinivaspur Town.
Vishkambha ..	^m Bharani rain, 1st pada ..	
SUDDHA.	ⁿ Sri Sankaracharyara Aradhanam.	
^g Preeti ..	^o Sri Narasimha Jayanti ..	
Ayushman ..	^p Bharani rain, 2nd pada	
Sowbhagya ..	Vyasa Pournami. Sri Kothandaramaswami Car	Bowringpet Town.
^h Sobhana ..	Festival, Bowringpet Town.	
ⁱ Atiganda ..		
^j Sukarma ..		
^k Dhriti ..		
Soola ..		
Ganda ..		
Vridhhi ...		
^m Dhruva ..		
ⁿ Vyaghata ..		
^o Harsha ..		
Vajra ...		
^p Siddhi ..		

Sugar-cane raiyats should lay in also a good supply of oil-cake for being used as manure for the sugar-cane. About 90 maunds will be required per acre, but even double this quantity may be used with advantage, for sugar-cane responds well to this manure. One-third of the quantity should be well powdered and applied at the time of planting, and the remaining two parts should be applied as top dressing later on during the growth of the cane. Sulphate of ammonia is a highly concentrated manure; it will stimulate growth quickly and encourage tillering. Use it at 2 cwts. per acre within three months from planting to supplement the cake manuring.

On dry lands when carting manure, cart also the soil from the beds of tanks which are usually dry at this time of the year, for the silt will both improve and enrich the soil.

The heaps should be gone over daily for two months. The moths will be found hiding under the heaps and these are easily caught and crushed. Boys could do the work and two of them could easily look after ten acres.

The remedy described above was tested last year on an extensive scale on the Government farm at Babbur and the attack by borer which used to be as high as 50 per cent was reduced to as low as 2 to 5 per cent. In a cane field about 4 miles off where the treatment was not carried out the loss reached nearly 50 per cent.

THE IMPROVEMENT OF SHEEP.

Although in Mysore sheep are not usually regarded as a very important branch of agriculture, there is a very fair profit to be made from the maintenance of a flock. This profit is made both directly and indirectly. The former is obtained from the wool and sale of the natural increase and the latter from manure, and from the beneficial manner in which sheep graze. As a means of keeping down and controlling the growth of weeds, the sheep has no equal. Moreover, the weeds eaten by sheep are all turned to account in the form of growth of both wool and flesh. It is safe to estimate that the annual gross earning of a single adult ewe is about Re. 1-15-0. This is arrived at after careful investigation and is made up in the following way.

	Rs. a. p.
Wool.—Annual yield $\frac{1}{2}$ lb @ Rs. 8 per maund of 28 lbs	0 2 0
Natural increase.—Reckoning one lamb every two years, selling for Rs. 3 at a year old	1 8 0
Manure.—Where folding is practised for six months.	0 5 0
Total	1 15 0

Actually it is found that mature sheep void about 2 lbs. solid dung every 24 hours, or 730 lbs. per annum. This at Rs. 2 per ton is approximately 10 annas each sheep per year. This does not include the manure deposited during the remaining six months, nor the value of the sheep in controlling weeds, and is based on conditions as they exist. This return is not of course obtained from every sheep in the flock, for reasons which are at once obvious, and which will be taken up later. At the same time, a larger return from each individual is possible to obtain, and a larger proportion of the flock should be capable of earning this amount. A good deal is left to be desired in the profit earning capacity of all flocks of sheep in Mysore, but to a very large extent an improvement could be brought about by better management, and with practically no extra expense.

Generally speaking, the sheep industry is capable of improvement in the following ways:—(1) Increase of the wool yield (2) improvement in the quality of wool, (3) increase in the production of young animals, both individually and in the flock as a whole, (4) more rapid growth of the lambs and (5) checking mortality by maintaining a better general health. Taking these points up individually, we may follow the order in which they are set down above and show in what ways improvement can be effected.

(1) *Increase in wool yield.*—It is a noteworthy fact that in every flock some sheep grow and carry a heavier fleece than others, and it is from the offspring of these individuals that the future flock should be formed. Rams intended for breeding especially, should be chosen from ewes which carry a heavy fleece. At present very little effort is made in this direction. All low yielding animals should be disposed of as soon as possible and practicable, and their progeny discarded from the breeding flock. When one remembers that the life of a sheep is only from six to eight years, or even less, it is apparent that the whole flock must be renewed within that time in any case, and it will not be a difficult matter to replace all old animals or animals otherwise disposed of by young ewes obtained from the best sheep in the flock, and to dispose of only those animals which are below the average. An increased yield of two ounces of wool from each animal will mean an increased income of 25 per cent from the wool of the flock.

(2) *Improvement in the quality of wool.*—Three things militate against the payment of good prices by woollen mills for Mysore wool. These are mixed colours, a short staple and dirt. While the quality of locally grown wool is low when compared with that of foreign breeds, the removal of the three impediments mentioned would have a material influence on the price of local wool. The mixed colour of wool necessitates the employment of labour to separate the colours in the mills, the coloured wool being incapable of being dyed and the short length of the fibres makes spinning difficult and often impossible if other wools of longer staple are not mixed with it, while the presence of dirt, burrs, twigs, etc., brings about the necessity of discarding a considerable quantity of wool altogether. Clean, long wool of a uniform colour would be readily bought by woollen mills at a better price than is at present paid. White wool obtains a better price than any coloured wool, but only when it is pure white and free from locks of coloured wool. Consequently a flock of pure white sheep will earn more than a mixed or coloured flock. Where white sheep already exist in a flock, the young of these should be retained *when they are white*, and the coloured ones gradually discarded and replaced by white ones. At first some white ewes will be found to give birth to coloured lambs, and those that continue to do so should be disposed of. If this policy is rigidly carried out, it will soon be found that white lambs are the rule rather than the exception. It will be necessary of course to use only white rams. Coloured rams will breed coloured lambs from the purest of white ewes, and much time will be lost in consequence. To improve the length of the wool, the sheep should be clipped only once a year, preferably in January or February. By clipping at this time of the year the sheep are put through the hot weather with a light fleece, and stand this trying season better. It is often said that sheep will not carry their fleece for a full year, but shed it after six months. Investigations carried out by the Department of Agriculture have proved this to be incorrect. The reason why wool is frequently lost by sheep after it is six or more months grown is the presence of lice and other parasites which cause an irritation and set the sheep rubbing on the nearest object, with a consequent loss of wool. By dipping the flock twice a year in a suitable solution, and ordinary care, sheep can be kept free of such parasites. Such a proceeding not only improves the wool, but also the general health of the animals. Dipping demonstrations

Holidays	English Dates	Days of week	Chandramana Dates	Tithies in Ghaliges and Vighaliges	Nakshatrams in Ghaliges and Vighaliges
VAISAKHA					
C.	1	Tuesday ...	1	Padyami ... 46 2	Svati ... 5 43
	2	Wednesday	2	Bidige ... 40 13	Visakha ... 1 34
					Anoradha ... 56 5
	3	Thursday ...	3	Tadige ... 35 9	Jeshta ... 54 44
	4	Friday ...	4	Chouti ... 31 0	Moola ... 52 50
	5	Saturday ...	5	Panchami ... 27 57	Poorvashadha ... 52 3
	6	Sunday ...	6	Shashti ... 26 29	Uttrashadha ... 52 26
	7	Monday ...	7	Saptami ... 25 27	Shravana ... 54 8
	8	Tuesday ...	8	Ashtami ... 26 2	Dhanishta ... 56 58
	9	Wednesday	9	Navami ... 27 46	Satabhisha ... 60 10
	10	Thursday ...	10	Dasami ... 30 31	Satabhisha ... 1 44
	11	Friday ...	11	Ekadasi ... 34 6	Poorvashadha ... 5 52
	12	Saturday ...	12	Dvadasi ... 38 17	Uttrabhadra ... 10 20
	13	Sunday ...	13	Trayodasi ... 42 46	Revati ... 17 12
	14	Monday ...	14	Chaturdasi ... 47 22	Asvini ... 23 16
	15	Tuesday ...	30	● Amavasya ... 51 36	Bharani ... 29 10
ADHIKA JESHTA					
M.	16	Wednesday	1	Padyami ... 55 34	Krittike ... 34 42
	17	Thursday ...	2	Bidige ... 58 34	Rohini ... 39 36
	18	Friday ...	3	Tadige ... 60 10	Mrigasira ... 43 38
	19	Saturday ...	3	Tadige ... 0 35	Aridra ... 46 36
	20	Sunday ...	4	Chouti ... 1 35	Punarvasu ... 48 26
	21	Monday ...	5-6	Panchami ... 1 21	Pushya ... 49 1
				Shashti ... 58 58	
	22	Tuesday ...	7	Saptami ... 58 15	Aslesha ... 48 22
	23	Wednesday	8	Ashtami ... 53 30	Makha ... 46 33
	24	Thursday ...	9	Navami ... 48 35	Pubba ... 43 38
	25	Friday ...	10	Dasami ... 42 48	Uttara ... 40 4
	26	Saturday ...	11	Ekadasi ... 36 38	Hasta ... 35 60
	27	Sunday ...	12	Dvadasi ... 30 5	Chitta ... 31 17
	28	Monday ...	13	Trayodasi ... 23 34	Svati ... 26 42
	29	Tuesday ...	14	Chaturdasi ... 17 9	Visakha ... 22 23
	30	Wednesday	15	○ Pournami ... 11 16	Anoradha ... 18 13
ADHIKA JESHTA					
C.	31	Thursday ...	1	Padyami ... 6 3	Jeshta ... 15 28

MONTHLY NOTES.

On fields ploughed after the previous harvest, sow in the *bharani* rains the early mungar crops, *viz.*, gingelli, jola, green gram or black gram or groundnut which can be followed in the months of September or October by a second crop, such as horse gram, cow-pea, bengal gram or wheat.

Sow all crops in rows and wide apart, *i.e.*, one foot so as to make inter-culture easy later on.

On dry lands not previously ploughed, ploughing should begin. Use the

Yogams	Feasts, Festivals, Government Holidays and Rainfall according to Nakshatrams	Dates of Cattle Fairs, Cattle shows and Agricultural Exhibitions and other useful notes
BAHULA.		
Vyatipata ...		
Varigha ...		
Parigha ...		
Siva ...		
Siddha ...		
Sadhya ...		
Subha ...		
Sukla ...		
Bramha...		
Mahendra ...		
Vaidruti ...		
Vishkambha ...		
Preeti ...		
Ayushman ...		
Sowbhagya ...		
SUDDHA.		
Sobhana ...		
Atiganda ...		
Sukarma ...		
Dhriti ...		
Soola ...		
Ganda ...		
Vridhhi, Dhruva ...		
Vyaghata ...		
Harsha ...		
Vajra ...		
Siddhi ...		
Vyatipata ...		
Varigha ...		
Parigha ...		
Siva, Siddha ...		
BAHULA.		
Sadhya ...		

Feasts, Festivals, Government Holidays and Rainfall according to Nakshatrams

Dates of Cattle Fairs, Cattle shows and Agricultural Exhibitions and other useful notes

Bharani rain, 3rd pada.
Bharani rain, 4th pada.
Ascension day.
Krittike rain, 1st pada
H. H. the Yuvaraja's Birthday.

Krittike rain, 2nd pada.
Kutba-e-Ramzan.
Krittike rain, 3rd pada.
Krittike rain, 4th pada.

Khutba-l-Ramzan.
Rohini rain, 1st pada.
Rohini rain, 2nd pada.

Rohini rain, 3rd pada.
Corpus Christi.

From this month onwards up to the middle of July, in every village in which there was an attack of Kamblinula last year, the villagers should go round the fields after every shower to pick up the moths which are white with golden bands on the body and are conspicuous objects in the fields. All moths caught should be killed by throwing them into water to which a little kerosene has been added. Picking may be done by children. This will prevent attack by Kamblinulas. See circular No. 15 of the department.

improved plough; for it will do the work of four country ploughs.

On wet lands, sow a green manure crop, such as sunn hemp (30 seers to the acre) or sunn-hemp and cow pea; this will be ready for being ploughed in puddle-sown paddy in July.

For sugar-cane planted in February, March, apply a second dose of oil-cake and dig it in lightly.

On garden land under well irrigation potatoes, onions, and turmeric can now be planted.

are now being held by the Department of Agriculture, and they will dip the sheep of any one who desires it, free of cost, on application. Experiments carried out up-to-date indicate a marked improvement in the health of the sheep which are clipped, a better price for wool so treated and clipped once a year, and moreover no loss in the amount of wool is sustained by such a procedure.

(3) *Increase in the production of lambs.*—Figures are hard to obtain as to the average number of lambs produced by 100 ewes annually, but it is doubtful if more than 50 are usually produced. In other words, the average flock of ewes produces only one lamb every two years per ewe. (However the average flock of sheep produces less than that per head of sheep, on account of the very large number of rams usually kept). There are doubtless ewes which produce a lamb every year. Unfortunately, these do not represent the average, but from these selections should be made for future breeding work. One of the main reasons for the low production of lambs, apart from the inherent slow breeding tendency, is the fact that the lambs are usually allowed to suckle until naturally weaned from the dam through the cessation of lactation. It is seldom that a ewe comes to heat while suckling a lamb, and consequently the next covering is postponed. In addition to this the prolonged period of suckling a lamb and drain on the system so entailed leaves the ewe in poor condition. As a result, she does not come into heat for some time, or if she does her condition is so poor as to make conception a matter of chance. Again lambs conceived under such circumstances are usually poor and weak when born. To overcome this, it would be well to wean the lambs from the ewes when the former are four or five months old. By that time the lambs are big enough to be able to graze and sustain growth as a result of their own feeding, and as the amount of milk then given by the ewe is not large, it will not be seriously missed by the lamb, which may be run in a separate flock for a few weeks. This procedure will give the ewe about two months to regain condition and come into heat again within twelve months from her previous covering. Under present conditions the above is a little difficult to carry into effect, as lambs are dropped in an irregular manner throughout the year, a state of affairs which is not desirable, and not hard to rectify. An effort should be made by flock-owners to create a definite season for breeding and for lambing. By withholding all rams from the ewes till about the middle of April, and then allowing them to go to the ewes in a vigorous condition, the majority of the ewes will be found to be covered within an interval of about a month in most parts of the State. The lambs will then be dropped about the middle of September, at which season green grass will be available and a strong flow of milk will be given by the ewes. The lambs will then be found to be old enough by the hot weather to be less susceptible to the effects of drought and disease and may be carried on to the early grass in fair condition. In this way all the lambs can be weaned at one time and the rams run with them in a separate flock until the end of March, when they can again be allowed to run in the main flock. This rest will invigorate the rams, give the ewes a chance to regain condition and to breed more rapidly, and ensure a proper and systematic weaning of the lambs with very little extra trouble.

It is a fact, that most flocks of sheep encountered in Mysore consist

of a very high percentage of rams, and invariably contain a large number of ewes too old to breed regularly. It will be found too, that lambs from these old ewes are poor when born and remain weakly. Every year the flock should be culled out, and all surplus rams and old ewes weeded out and sold, and run in a separate flock till sold. One ram to every thirty-five ewes is sufficient for breeding purposes. A larger number than that means that the ewes are worried all day long by a succession of aspiring bucks, and that the rams are continually engaged in struggles among themselves. Moreover, a larger number of rams is an unprofitable feature, unless these are castrated early. They then graze peacefully and become profitable animals for the purposes of sale. By adopting such methods as those outlined, the flock will become more efficient by breeding more rapidly, and the lambs will be found to grow faster and become mature earlier. Consequently larger profits will be earned.

It has been already indicated that some care should be exercised in selecting rams for breeding purposes. And too much stress cannot be laid on this point. It is to be remembered that the ram influences the progeny of all those ewes with which he mates, so that his effect on the future generation is an extremely important one. Great care should therefore be exercised in selecting the rams which are to be allowed to breed. Only those from well woolled and healthy, quick breeding ewes should be selected. They themselves should be good individuals, good growers, and carrying a distinctly masculine appearance. Rams are only too numerous which cannot be identified from the ewes of the flock. Such animals will not be able to impress themselves upon their progeny. Only white rams, born from white ewes should be used, where it is the aim to produce a white flock, and it has been pointed out that such flocks will be the best profit earners. From time to time, at least every three years, fresh blood should be introduced into the flock by means of a ram brought from another flock. Otherwise inbreeding will be practised, which results in poor and sickly sheep. The need for rams of improved breeding is well recognised by the Department of Agriculture, and efforts are being made to assist in supplying suitable rams bred on the Government sheep farms at Hebbal and at Yelwal for that purpose. During the coming season a few will be available from this source, and it is hoped that more will be supplied in the future.

Such attention to the flock as indicated above will be productive of better results than are at present generally obtained, which much more than pay for the trouble involved. A better health will be maintained and a higher resistance to the ravages of disease ensured.

SMUT ON RAGI.

We have been hitherto considering ragi to be one of those rare cultivated plants which are not affected by any disease. The few diseases which have been reported on ragi, have been found to occur only sporadically, without ever assuming the serious nature of the diseases occurring on sugar-cane, paddy, etc. However during the last two or three years many diseases of ragi have made their appearance virulently enough to cause great loss. One of these, which, a few years ago

Holidays	English Dates	Days of week	Chandramana Dates	Tithies in Ghaliges and Vighaliges	Nakhastrams in Ghaliges and Vighaliges
G.	1	Friday ...	2-3	Bidige ... 1 46 Tadige ... 56 30	ADHIKA JESHTA Moola ... 13 18
	2	Saturday ...	4	Chouti ... 56 17	Poorvashadha ... 12 15
	3	Sunday ...	5	Panchami ... 55 32	Uttrashadha ... 12 32
	4	Monday ...	6	Shashti ... 56 2	Sravana ... 13 45
	5	Tuesday ...	7	Saptami ... 57 40	Dhanishta ... 16 18
	6	Wednesday ...	8	Ashtami ... 60 10	Satabhisha ... 19 57
	7	Thursday ...	8	Ashtami ... 0 32	Poorvabhadra ... 24 32
	8	Friday ...	9	Navami ... 4 7	Uttrabhadra ... 29 5
	9	Saturday ...	10	Dasami ... 8 6	Revati ... 35 36
	10	Sunday ...	11	Ekadasi ... 12 32	Asvini ... 41 40
	11	Monday ...	12	Dvadasi ... 16 59	Bharani ... 47 39
	12	Tuesday ...	13	Trayodsi ... 21 15	Krittike ... 53 19
	13	Wednesday ...	14	Chaturdasi ... 25 3	Rohini ... 58 26
	14	Thursday ...	30	● Amavasya 27 41	Mrigasira ... 60 10
G.	15	Friday ...	1	Padyami ... 30 15	NIJA JESHTA Mrigasira ... 2 31
	16	Saturday ...	2	Bidige ... 31 17	Aridra ... 5 43
	17	Sunday ...	3	Tadige ... 31 4	Punarvasu ... 7 46
	18	Monday ...	4	Chouti ... 29 38	Pushya ... 8 37
	19	Tuesday ...	5	Panchami ... 26 58	Aslesha ... 8 16
	20	Wednesday ...	6	Shashti ... 23 9	Makha ... 6 44
	21	Thursday ...	7	Saptami ... 18 21	Pubba ... 4 10
	22	Friday ...	8	Ashtami ... 12 46	Uttra ... 0 45
	23	Saturday ...	9	Navami ... 6 35	Hasta ... 55 58
	24	Sunday ...	10-11	Dasami ... 0 5	Chitta ... 52 9
				Ekadasi ... 53 20	Svati ... 47 29
	25	Monday ...	12	Dvadasi ... 46 54	Visakha ... 43 4
	26	Tuesday ...	13	Trayodasi ... 40 57	Anoradha ... 39 5
	27	Wednesday ...	14	Chaturdasi ... 35 41	Jeshta ... 35 45
	28	Thursday ...	15	○ Pournami 31 17	Moola ... 33 10
	29	Friday ...	1	Padyami ... 28 0	NIJA JESHTA Poorvashadha ... 32 0
	30	Saturday ...	2	Bidige ... 26 8	Uttrashadha ... 32 6

MONTHLY NOTES.

The south-west monsoon begins in this month, and it is really the season for preparing land for sowing. For, nearly all the fields remain untouched, baking and hardening through the hot months and only the heavy showers of this month can moisten them sufficiently well to plough. Fields, however, which were given the first ploughing in the previous month, should be cross-ploughed now, so as to kill the weeds which may have sprouted in the interval. In the preparation of the soil for sowing, the point to remember is the great

Yogams	Feasts, Festivals, Government Holidays and Rainfall according to Nakshatrams	Dates of Cattle Fairs, Cattle Shows and Agricultural Exhibitions and other useful notes
BAHULA.		
Subha ...		
Sukla ...		
Bramha ...	H. H. The King Emperor's	
	Birth-day.	
Mahendra ...	Rohini rain, 4th pada.	
Vaidruti ...		
Vishkambha ...		
Preeti ...	Mrigasira rain, 1st pada.	
Ayushman ...		
Sowbhagya ...		
Sobhana ...		
Atiganda ...	Mrigasira rain, 2nd pada.	
Sukarma ...		
Dhriti ...		
Soola ...	Mrigasira rain, 3rd pada.	
SUDDHA		
Ganda ...		
Vridhi ...		
Dhruva ...		
Vyaghata ...	Mrigasira rain, 4th pada.	
Harsha ...		
Vajra ...		
Siddhi ...		
Vyatipata, Varigha...	Aridra rain, 1st pada.	
Parigha ...		
Siva ...	Smartha Ekadasi. H. H.	
	The Maharaja's Birthday.	
Siddha ...	Vaishnava Ekadasi, Aridra	
	rain, 2nd pada.	
Sadhya ...		
Subha ...	H. R. H. The Prince of	
	Wales' Birthday.	
Sukla ...		
BAHULA.		
Bramha ...	Aridra rain, 3rd pada.	
Mahendra ...		
Vaidruti ...		

saving in time and money which can be effected by the use of the improved implements such as the improved or the mould-board plough, the six shovel cultivator, the disc harrow and the *doddakunte*. All these implements can be seen in the Government experimental farms. They are stocked and sold by the Agricultural Department, and can be had in the Central Implement Depot in Bangalore and in the depots of the Agricultural Inspectors in the districts.

On fields got ready for sowing, main crops of jola, Dharwar—American cotton and dry land paddy may be sown.



PLATE II—SMUT ON RAGI.

occurred only here and there in ragi fields, and is recently assuming an epidemic form, is the ragi smut (*Kadige roga* or *Masi roga*). Entire fields were found ravaged by the disease in many places in Doddballapur, Chikballapur, Devanhalli, Bangalore, Srinivasapur and Kankanhalli Taluks.

The symptoms of the disease are quite easy to recognise. The earheads present a black appearance, and on closer examination show the presence of a black powdery mass in the place of the grains. The spikelets which are affected by the disease, are much enlarged as compared to the normal healthy spikelets containing the ragi grains, appearing like small galls on the earheads (see Plate II). These swellings burst open and innumerable round, black spores, similar in appearance to those found in the *kadige roga* of jola are scattered. These spores form the sources of infection, for the next crop. This may occur either through seed infection, when seed from the infected area is again used for sowing, or through the cattle manure applied to the land, when the cattle feed on the straw of the infected plants.

Experiments were conducted at Hejjaji near Doddballapur to see if the disease could be kept under control by the method, so commonly in practice in the Chitaldrug District for controlling jola smut. This method consists of steeping the seeds before sowing in a solution of copper sulphate. At Hejjaji, seeds were soaked previous to sowing in various solutions, such as formalin $\frac{1}{2}$ % and $\frac{1}{4}$ % and copper sulphate $\frac{1}{2}$ % and 1 % for different lengths of time.

The results obtained from these trials were not conclusive. This experiment is being repeated in the laboratory.

It is assumed, while conducting this experiment, that the sowing of the infected seed brings on the disease, and that treatment of the seed, as in the case of jola, may prove to be a remedial measure. Another possibility is that the smut infection may occur through the young flowers or earheads. An elaborate investigation of this disease is being carried on with a view to bring under control this disease, which has been on the increase to an alarming extent in many places.

BLACK QUARTER OR BLACK LEG OR QUARTER EVIL.

This is an infective disease, principally of cattle, which has made its appearance in our province within the last 50 or 60 years. This disease is enzootic, *i.e.*, confined to and localised in certain areas where it seasonally breaks out during early rains. Young cattle are primarily attacked, calves 9 to 18 months old being specially susceptible to it. Sheep are rarely affected and goats seldom or never.

The bacilli which give rise to this disease thrive on low-lying swampy soil and gain entrance into the system of animals grazing thereon either through the wounds on their feet, tail or mouth or through the media of the grass and water *via* the digestive canal.

The invasion of the organism is as subtle as its dread course in the system is rapid. The "period of incubation", which means the time the organism takes to create in the animal system its characteristic disturbances, is very short. Within 2 to 5 days after the bacilli gain access to the body the symptoms begin to declare themselves. The duration of the disease is shorter still. Not uncommonly animals succumb within 24 hours of the attack and few survive beyond 3 days.

Holidays	English Dates	Days of week	Chandramana Dates	Tithies in Ghaliges and Vighaliges	Nakshatrams in Ghaliges and Vighaliges
					NIJA JESHTA
	1	Sunday ..	3	Tadige .. 25 1	Sravana .. 32 57
	2	Monday ..	4	Chouti .. 25 22	Dhanishta .. 35 14
	3	Tuesday ..	5	Panchami .. 26 52	Satabhisha .. 38 37
	4	Wednesday..	6	Shashti .. 29 25	Poorvabhadra .. 42 59
	5	Thursday ..	7	Saptami .. 32 55	Uttrabhadra .. 48 9
	6	Friday ..	8	Ashtami .. 36 48	Revati .. 53 51
	7	Saturday ..	9	Navami .. 41 12	Asvini .. 59 53
	8	Sunday ..	10	Dasami .. 45 42	Bharani .. 59 10
	9	Monday ..	11	Ekadasi .. 50 0	Bharani .. 5 52
	10	Tuesday ..	12	Dvadasi .. 53 52	Krittike .. 11 35
	11	Wednesday..	13	Trayodasi .. 57 2	Rohini .. 16 45
	12	Thursday ..	14	Chaturdasi .. 59 15	Mrigasira .. 21 9
	13	Friday ..	30	●Amavasya.. 59 10	Aridra .. 24 36
	14	Saturday ..	30	●Amavasya.. 0 8	Punarvasu .. 26 56
					ASHADHA
	15	Sunday ..	1-2	Padyami .. 0 5	Pushya .. 28 6
				Bidige .. 58 55	
	16	Monday ..	3	Tadige .. 56 19	Aslesha .. 27 59
	17	Tuesday ..	4	Chouti .. 52 32	Makha .. 26 40
	18	Wednesday..	5	Panchami .. 47 42	Pubba .. 24 19
	19	Thursday ..	6	Shashti .. 42 5	Uttra .. 20 3
	20	Friday ..	7	Saptami .. 31 52	Hasta .. 17 4
	21	Saturday ..	8	Ashtami .. 29 19	Chitta .. 12 40
	22	Sunday ..	9	Navami .. 22 41	Svati .. 8 4
M	23	Monday ..	10	Dasami .. 16 16	Visaka .. 3 35
					Anoradha .. 55 43
M	24	Tuesday ..	11	Ekadasi .. 10 16	Jeshta .. 55 45
	25	Wednesday..	12	Dvadasi .. 4 56	Moola .. 53 8
	26	Thursday ..	13-14	Trayodasi .. 0 28	Poorvashadha .. 51 31
				Chaturdasi .. 56 8	
	27	Friday ..	15	O Pournami.. 54 37	Uttrashadha .. 51 5
					ASHADHA
	28	Saturday ..	1	Padyami .. 53 40	Sravana .. 51 52
	29	Sunday ..	2	Bidige .. 53 55	Dhanishta .. 53 53
	30	Monday ..	3	Tadige .. 55 25	Satabhisha .. 57 1
	31	Tuesday ..	4	Chouti .. 57 55	Poorvabhadra .. 60 10

MONTHLY NOTES.

Nearly all the main crops of the year, viz., ragi, jola groundnut, sajje, save, haraka with their subordinate *akkadi* crops are sown this month.

On wet lands, paddy is sown in puddle if water is available, or sown in a dry (not irrigated or puddled) seedbed.

Both ragi and paddy intended for seed should be selected before being sown; for it has been found that the sowing of such selected seeds increases the yield materially. The selection is for securing heavy grains; for this purpose prepare a solution of ordinary salt in water using one seer of salt to two of water; put the seed paddy or ragi into the solution and stir;

Yogams	Feasts, Festivals, Government Holidays and Rain-fall according to Nakshatrams	Dates of Cattle Fairs, Cattle Shows and Agricultural Exhibitions and other useful notes
BAHULA. Vishkambha .. Preeti .. Ayushman .. Sowbhagya .. Sobhana .. Atiganda .. Sukarma .. Dhriti .. Soola .. Ganda .. Vridhi .. Dhruva .. Vyaghata .. Harsha ..	 Aridra rain, 4th pada. Punarvasu rain, 1st pada. Punarvarsu rain, 2nd pada. Punarvasu rain, 3rd pada.	
SUDHA. Vajra .. Siddhi .. Vyatipata .. Varigha .. Parigha .. Siva .. Siddha .. Sadhya Subha .. Sukla .. Bramha .. Mahendra .. Vaidruti .. Vishkambha ..	Dakshinayana Punyakala. Punarvasu rain, 4th pada. Pushya rain, 1st pada. Pushya rain, 2nd pada. Bakrid on 23rd and 24th. Pratama Ekadasi. Pushya rain, 3rd pada. Vyasa Pournami.	
BAHULA. Preeti .. Ayushman .. Sowbhagya .. Sobhana ..	 Pushya rain, 4th pada.	

remove and reject the grains which float and use the grains which sink to the bottom for seed, after drawing the salt water away and giving the grain a washing with fresh water. Treat jola with a solution of copper sulphate for smut or *kadige roga*. Packets of copper sulphate with full instructions regarding the method of using it can be had in all the depots of the department.

The new variety of ragi called H22 is a high yielder both in grain and straw. It is now grown on thousands of acres. Try its suitability to your tract. Other good strains can also be had on application to the department.

During the first half of this month, chillies and tobacco intended to be raised as dry crops should be sown in nursery beds, so as to have seedlings ready for transplanting about the end of the next month.

The following is a complete list of the notable indications of this disease. The animal appears dull and dejected. There is loss of appetite, and rumination is suspended. The animal stands away from the herd with drooping head and arched back. The pulse is quicker and respiration more frequent than is usual in health. If temperature is taken it will be found as high as 104 or even 107 degrees. Muscular tremors and spasmodic movements become pronounced, and lameness is noticeable. A closer examination reveals one or more swellings somewhere about the hips or shoulders, neck or trunk but never below the knees or hocks. This swelling has distinctive features of its own and develops in a characteristic manner. It begins by being small, hot and painful, and a pit forms on pressure which does not fill up rapidly as in healthy flesh. Soon it grows in size, gets filled with foul gases, sounds hollow when tapped, produces a crackling sound under the fingers, and eventually cold and lifeless. If at this period, the swelling is opened it discharges a dark frothy fluid which smells sour.

The animal's sufferings increase as the swelling develops. Breathing becomes increasingly difficult and distressing suggestive of early collapse. Unconsciousness supervenes and the end is reached in a large majority of cases.

Only where the attack has been less virulent could there be any chance of recovery, but even that depends upon prompt recognition of the disease followed by the most judicious treatment and nursing, especially the last. Such cases of recovery make the animal immune to the disease for life.

Treatment.—There is no known specific or certain cure for this disease. The swellings may be opened with a knife and the contents thoroughly washed out with antiseptic lotions such as carbolic lotion (1-20). Disinfectants such as turpentine or tincture iodine should then be repeatedly introduced into the opening. If the enlargement starts on a limb and is noticed soon enough a tight ligature should be applied above the swelling, which should be scarified, *i.e.*, scratched all over with a sharp instrument; or the entire surface of the swollen part may be branded. Internal administration of permanganate of potash (1 to 2 drams or $\frac{1}{2}$ to $\frac{3}{4}$ tola) well diluted with gruel or water is also recommended.

Prevention.—It is now very easy to successfully protect animals against this disease. The first preventive measure to be adopted is to avoid the pastures which are "infected" or, in other words, those that are known to have produced the disease previously. Animals which are susceptible to the disease should be vaccinated a month before it usually breaks out. The protection conferred by the vaccination in vogue lasts from 9 to 12 months. Therefore, in localities where the disease appears annually at a particular season vaccination be carried out once a year at least a few weeks before the actual "disease season". But it is unsafe to carry out vaccination in places where the disease seldom or never occurs.

Post Mortem Appearances.—The carcase decomposes rapidly. If the characteristic enlargements are cut open the muscles underneath are found to be of dark-brown or even of black colour and give forth a peculiar sour smell. The connected glands may be found enlarged and inflamed. Frothy blood may be found in the heart and in the larger veins. Usually the other internal organs appear quite normal.

MANURIAL REQUIREMENTS OF RED SOILS.

During the last 15 years a number of samples of red soils from various parts of the State have been analysed in the chemical laboratory of the Department of Agriculture, and they have always shown a general deficiency in nitrogen and phosphoric acid. To get a preliminary idea as to what extent such red soils would respond to various nitrogenous and phosphatic manures, pot experiments are being conducted since 1920.

The nitrogenous manures experimented with are nitrate of soda, sulphate of ammonia, groundnut cake, honge cake and castor cake. Each treatment has always been repeated in 4 different pots to eliminate the experimental error as far as possible and the average yields from such four similarly treated pots are given in the tables that follow. The experiments have been conducted with reference to the crops usually grown on red soils, ragi and jola, which form two of the staple crops of our State.

The results of experiments conducted in 1920 to see how far various nitrogenous manures are utilised by ragi when grown in a red soil are given in the following table :—

Weight of total dry matter produced, in grams.

	Nitrate of soda	Sulphate of ammonia	G. nut cake	Honge cake	Castor cake
No manure ...	50'1 26'2	141'4 26'2	108'5 26'2	92'1 26'2	130'1 26'2
Increase due to nitrogen.	23'9	115'2	82'3	65'9	103'9

Weight of grain produced, in grams.

	Nitrate of soda	Sulphate of ammonia	G. nut cake	Honge cake	Castor cake
No manure ...	16'8 7'4	41'5 7'4	32'5 7'4	27'4 7'4	38'0 7'4
Increase due to nitrogen.	9'4	34'1	25'1	20'0	30'6

From the above figures it will be seen that the increase in yield, both with regard to grain as well as total dry matter produced, has been the highest in the case of sulphate of ammonia and least in the case of nitrate of soda. Of the oil-cakes, castor cake has shown itself the best and groundnut and honge come next to it in order.

The results of experiments with jola conducted in 1921 are given in the following table :—

Weight of the total dry matter produced, in grams.

	Nitrate of soda	Sulphate of ammonia	G. nut cake	Honge cake	Castor cake
No manure ...	6'4 4'8	25'1 4'8	24'4 4'8	27'3 4'8	47'3 4'8
Increase due to nitrogen.	1'6	20'3	19'6	22'5	42'5

Holidays	English Dates	Days of week	Chandramana Dates	Tithies in Ghaliges and Vighaliges	Nakshatrams in Ghaliges and Vighaliges
ASHADHA					
H.	1	Wednesday .	5	Panchami ... 60 10	Poorvabhadra .. 0 22
	2	Thursday ...	5	Panchami ... 1 28	Uttrabhadra .. 6 23
	3	Friday ...	6	Shashti ... 5 27	Revati .. 11 58
	4	Saturday ...	7	Saptami ... 9 49	Asvini .. 17 53
	5	Sunday ...	8	Ashtami ... 14 19	Bharani .. 23 53
	6	Monday ...	9	Navami ... 16 37	Krittike .. 29 41
	7	Tuesday ...	10	Dasami ... 22 29	Rohini .. 35 1
	8	Wednesday .	11	Ekadasi ... 25 41	Mrigasira .. 39 39
	9	Thursday ...	12	Dvadasi ... 27 56	Aridra .. 43 21
	10	Friday ...	13	Trayodasi ... 29 7	Punarvasu .. 45 55
	11	Saturday ...	14	Chaturdasi ... 28 8	Pushya .. 47 21
	12	Sunday ...	30	●Amavasya 27 52	Aslesha .. 47 32
SRAVANA					
	13	Monday ...	1	Padyami ... 25 24	Makha .. 46 40
	14	Tuesday ...	2	Bidige ... 21 45	Pubba .. 44 21
	15	Wednesday .	3	Tadige ... 17 6	Uttra .. 41 13
	16	Thursday ...	4	Chouti ... 11 37	Hasta .. 37 20
	17	Friday ...	5-6	Panchami ... 5 30	Chitta .. 32 57
				Shashti ... 53 34	
	18	Saturday ...	7	Saptami ... 52 52	Svati .. 28 21
	19	Sunday ...	8	Ashtami ... 45 54	Visakha .. 23 48
M.	20	Monday ...	9	Navami ... 49 54	Anoradha .. 19 36
M.	21	Tuesday ...	10	Dasami ... 34 25	Jeshta .. 15 55
M.	22	Wednesday .	11	Ekadasi ... 29 47	Moola .. 13 46
G.	23	Thursday ..	12	Dvadasi ... 26 42	Poorvashadha .. 11 15
	24	Friday ...	13	Trayodasi ... 24 30	Uttrashadha .. 10 32
G.	25	Saturday ...	14	Chaturdasi ... 23 30	Sravana .. 11 2
G.	26	Sunday ...	15	O Pournami ... 23 44	Dhanishta .. 12 44
SRAVANA					
	27	Monday ...	1	Padyami ... 25 10	Satabhisha .. 15 38
	28	Tuesday ...	2	Bidige ... 27 39	Poorvabhadra .. 19 34
	29	Wednesday .	3	Tadige ... 31 1	Uttrabhadra .. 24 26
	30	Thursday ...	4	Chouti ... 35 1	Revati .. 29 49
	31	Friday ...	5	Panchami ... 39 27	Asvini .. 35 42

MONTHLY NOTES.

A busy month for interculturing the main crops. It is well to note that for cultivating between the rows, the small *kunte* with an entire blade—a miniature *doddakunte*—is an excellent implement, as it works the whole of the space between the rows. Labour can be economised by using two or three of these with one team.

On black cotton soils, the main crop of local cotton (*sama hatti*) with its mixture of *navane* should be sown about the middle of this month.

Yogams	Feasts, Festivals, Government Holidays and Rain-fall according to Nakshatrams	Dates of Cattle Fairs, Cattle Shows and Agricultural Exhibitions and other useful notes
BAHULA.		
Atiganda	... Tikacharyara Punya Dina.	
Sukarma	...	
Dhriti	.. Aslesha Rain 1st pada.	
Soola	...	
Ganda	...	
Vridhhi	... Aslesha Rain 2nd pada.	
Dhruva	..	
Vyaghata	...	
Harsha	...	
Vajra	.. Aslesha Rain 3rd pada.	
Siddhi	...	
Vyatipata	... Bheemana Amavasya.	
SUDDHA.		
Varigha Parigha	.. Aslesha Rain 4th pada.	
Siva	...	
Siddha	..	
Sadhya	.. Nagachaturthi.	
Subha	... Garudapanchami, Makha Rain 1st pada.	
Sukla	...	
Bramha	..	
Mahendra	.. Makha Rain 2nd pada.	
Vishkambha	... 20th to 22nd Moharam	
Preeti	.. Holidays.	
Ayushman	... Makha Rain 3rd pada. Last day of Moharam.	
Sowbhagya	... Varamabalakshmi Vratam.	
Sobhana	... Asvalayana Sravani.	
Atiganda	.. Apastambha Sravani.	
BAHULA.		
Sukarma	.. Gayatri Japam Makha Rain	
Dhriti	... 4th pada.	
Soola	..	
Ganda	.. Pubba Rain 1st pada.	
Vridhhi	...	

On fields kept repeatedly ploughed, harrowed and weeded during the past three months, chillies should be transplanted; so should tobacco, the transplanting of which may be continued from about the latter part of this month to the middle of the next.

On garden lands under well irrigation, the main rainy season grain crop of ragi may be transplanted.



PLATE III.

112 Groundnut cake only.
 134 Groundnut cake and super
 116 Kurdi cake only.

140 Kurdi cake and super.
 118 Castor cake only.
 142 Castor cake and super.

The maximum amount of crop produced in this series is only 47 grams whereas it was 141 grams or 3 times as much in the case of ragi. The soil used in 1921 was not the same as that used for ragi experiments in 1920. Whether the difference in yields produced is due to the soil or the crop is being investigated by growing the two crops in the same soil and under similar conditions. Even here it is seen that sulphate of ammonia has acted better than nitrate of soda and that castor cake is the best of the three kinds of cake tried. That the two kinds of soil used are deficient in nitrogen and that they respond to nitrogenous manures is clearly indicated from the results tabulated above.

It has already been stated that chemical analysis of red soils has indicated that they are deficient, at any rate not rich in phosphoric acid as well. To find out how far response to phosphatic manuring can be expected, a new series of experiments was started in 1921 using superphosphate along with various sources of nitrogen. Superphosphate was selected because from the results of another series of experiments in which super, basic slag and bone-meal were tried, it was found to be the most available source of phosphorus.

The results of the series of experiments with superphosphate along with various sources of nitrogen using jola as the experimental crop are given in the following table:—

Weight of total dry matter produced, in grams.

	No Nitrogen	Nitrate of soda	Sulphate of ammo- nia	G. nut cake	Honge cake	Castor cake
With super ...	8'6	88'3	98'1	79'6	74'7	76'1
No super ...	4'8	6'4	25'1	24'4	27'3	47'3
Increase due to super.	3'8	81'9	73'0	55'2	47'4	28'8

These results show that the addition of superphosphate has increased the yield considerably and a combination of sulphate of ammonia and superphosphate seems to be the best. The increase in yield due to the addition of superphosphate is more in the case of nitrate of soda than in the case of sulphate of ammonia, but this seems to be enhanced by the fact that nitrate of soda alone gave a very low yield.

The differences in growth due to the addition of superphosphate to oil-cakes used for experiments with jola are clearly shown in the photograph reproduced in plate III.

These experiments have brought out the fact that both nitrogenous and phosphatic manures are needed to increase production on the types of red soils experimented with. Experiments with regard to potash and lime requirements have not yielded any clear indications as yet. Making use of the indications obtained in pot experiments, field experiments are being planned out for determining the variations due to climatic and cultural conditions as also to find out the most economic doses of sulphate of ammonia, castor cake and superphosphate that can be applied to crops like ragi and jola.

Holidays	English Dates	Days of week	Chandramana Dates	Tithies in Ghaliges and Vighaliges	Nakshatrams in Ghaliges and Vighaliges
					SRAVANA
	1	Saturday ..	6	Shashti .. 44 4	Bharani ... 41 45
	2	Sunday ..	7	Saptami .. 48 24	Krittike .. 47 37
	3	Monday ..	8	Ashtami .. 52 29	Rohini .. 53 8
	4	Tuesday ..	9	Navami .. 55 48	Mrigasira ... 57 58
	5	Wednesday.	10	Dasami .. 58 15	Aridra .. 60 10
	6	Thursday ..	11	Ekadasi .. 59 3	Aridra .. 1 41
	7	Friday ..	12	Dvadasi .. 59 42	Punarvasu .. 4 31
	8	Saturday ..	13	Trayodasi .. 59 38	Pushya .. 6 10
	9	Sunday ...	14	Chaturdasi .. 56 10	Aslesha ... 6 36
	10	Monday ...	30	●Amavasya .. 52 34	Makha .. 5 52
					BHADRAPADA
	11	Tuesday ..	1	Padyami .. 47 56	Pubba .. 3 59
	12	Wednesday.	2	Bidige .. 42 28	Uttra ... 1 7
H.	13	Thursday ..	3	Tadige .. 36 22	Hasta .. 56 29
					Chitta ... 53 8
G.	14	Friday ..	4	Chouti .. 29 53	Svati .. 48 34
	15	Saturday ...	5	Panchami .. 23 20	Visakha ... 43 55
	16	Sunday ..	6	Shashti .. 16 56	Anoradha ... 39 34
	17	Monday ...	7	Saptami .. 11 0	Jeshta .. 35 46
	18	Tuesday ...	8	Ashtami .. 5 40	Moola .. 32 39
	19	Wednesday.	9-10	Navami .. 1 13	Poorvashadha ... 30 38
				Dasami .. 56 18	
	20	Thursday ..	11	Ekadasi .. 55 19	Uttrashada ... 29 38
	21	Friday ..	12	Dvadasi .. 54 23	Sravana ... 29 51
	22	Saturday ..	13	Trayodasi .. 54 41	Dhanishta .. 31 17
H.	23	Sunday .	14	Chaturdasi .. 56 13	Satabhisha .. 33 57
	24	Monday ...	15	○Pournami .. 58 44	Poorvabhadra .. 37 36
					BHADRAPADA
	25	Tuesday ...	1	Padyami .. 60 10	Uttrabhadra .. 42 13
	26	Wednesday.	1	Padyami .. 2 22	Revati .. 47 33
	27	Thursday ...	2	Bidige .. 6 26	Asvini .. 53 22
	28	Friday ...	3	Tadige .. 10 58	Bharani ... 59 25
	29	Saturday ..	4	Chouti .. 15 36	Krittike .. 60 10
	30	Sunday ..	5	Panchami .. 20 5	Krittike .. 5 17

MONTHLY NOTES.

The early *mungar* crops sown in the *bharani* rains become ready for harvest towards the latter part of the month; after harvest, plough these lands and prepare them for a second crop (*vide* notes under May for list of crops thus to be sown).

It should be noted that from this month onwards till the close of the year, green fodder is in full flush. The manure, principally the urine from

Yogams	Feasts, Festivals, Government Holidays and Rainfall according to Nakshatrams	Dates of Cattle Fairs, Cattle Shows and Agricultural Exhibitions and other useful notes
BAHULA.		
Dhruva	...	
Vyaghata	..	
Harsha	... Pubba Rain 2nd pada. Sri Krishna Jayanti.	Paddy is liable to attack
Vajra	..	by stem borer from this
Siddhi	..	month up to November.
Vyatipata	... Pubba Rain 3rd pada.	The shoot is killed by a
Varigha	..	caterpillar, which bores
Parigha	..	into it. The plants at-
Siva	..	tacked will have the
Siddha	... Pubba Rain 4th pada.	shoots withered. The
SUDDHA.		caterpillars turn into
Sadhya	..	moths. The moths lay
Subba	..	eggs in masses, covered
Sukla, Brahma	..	by golden hairs, on the
Mahendra	..	leaves. These are easily
Vaidruti	..	seen and should be hand-
Vishkambha	..	picked and destroyed.
Preeti	..	Light traps (hurricane
Ayushman	..	lanterns placed in a basin
Sowbhagya	..	with a little water and
Sobhana, Atiganda	..	kerosene) kept in the field
Sukarma	...	at a height of 4 feet from
Dhriti	..	the ground, will attract
Soola	..	and kill the moths. If
Ganda	..	these measures are not
BAHULA.		adopted, 10 to 20 per
Vridhhi	..	cent of the crops may be
Dhruva	..	destroyed. Weeds also
Vyaghata	..	must be removed. Pest
Harsha	..	common in the Mysore
Vajra	..	district.
Siddhi	... Hasta Rain 1st pada.	
Harsha	..	
Vajra	..	
Siddhi	... Mahabharani.	
Siddhi	... Hasta Rain 2nd pada.	

the animals, is very valuable during this period, much more so than during the hot months or early rains when all animals, except those in milk or working bullocks, are practically on starvation rations. Special care should be taken to see that all the urine from the stalls finds its way into the manure pit.

Towards the end of this month, on well-drained wet lands and garden lands, Cambodia cotton may be sown.

WRAPPING SUGAR-CANE.

In many parts of the State, it is the practice to wrap the dead leaves of sugar-cane round the canes, and to tie up the canes from one stool into a bundle. This wrapping of canes costs from Rs. 30 to 60 an acre according to labour conditions, and the average cost can be put down as Rs. 40 an acre. Three wrappings are usually given, the first when the canes are about six months old, the second when the canes are eight months, and the third two months later. It is the first wrapping that is most expensive, the succeeding ones being more easy to do. The main object of this practice seems to be to keep the canes from lodging or falling down. The lodging of the cane results not only in the canes breaking, but further, the canes that are so bent are within easy reach of rats which are then able to inflict a considerable amount of damage. Wrapping seems also to protect the canes from attacks of jackals and borers to some extent.

To find out if wrapping had got any effect on the growth of cane and hence on the money returns from cane, a series of experiments was started last year, and this was worked into the cane spacing and manurial tests being conducted on the farm. Only two years' results are thus obtainable and hence the deductions can only be very tentative.

Speaking broadly it can be said that where the spacing has been narrow, *viz.*, two feet between the rows, wrapping has not paid. In other words, where the cane is planted in rows only two feet apart the expense involved in wrapping has not been compensated for in the yield of jaggory. On the other hand, leaving the canes unwrapped seems actually to have increased the amount of cane and jaggory obtained. It seems to be that where the canes are grown close like this, the canes of one row are propped up by the canes in the next row and thus lodging is prevented to a great extent. At the same time there is an unhampered development of the cane.

In the wider spacing however, the increase in return has been more than sufficient to cover the cost of wrapping. This was especially so where the canes received large doses of manure *viz.*, three tons of oil-cake. The vigorous growth induced by this amount of manure resulted in tall canes which benefited by being wrapped.

It must always be kept in mind that even where wrapping does not result in increased yields, it is otherwise beneficial. It gives easy access into the field and allows the farmer to keep his field clean of weeds, insects, rats, rabbits and jackals. It prevents the cane sprawling all over the ground coming within easy reach of its enemies and also prevents the breaking of the more brittle canes.

One might therefore say that wrapping is advisable where canes are grown in rows three feet or more apart. Where canes are grown closer, wrapping seems to be inadvisable. Since the wider spacing is coming to be adopted generally, one seems justified in advocating the system of wrapping canes. But this has yet to be confirmed.

As a compromise, the expenses incident on the present system of wrapping could be cut down considerably and all the advantages of wrapping obtained without the possible attendant disadvantages by modifying the system of wrapping and reducing it to more or less mere tying up of canes likely to lodge. This has to be tried thoroughly before anything definite can be said about it. The results so far obtained are not

very conclusive. That some sort of wrapping is necessary in these parts is shown by the fact that in a field which was left unwrapped, one or two canes, damaged by rats, have been found almost every day. It remains to be seen whether the usual three wrappings are necessary or if only one wrapping will be enough.

THE DEFECTS IN SILK-WORM REARING IN THE STATE AND SOME SUGGESTIONS TO OVERCOME THEM.

The most important factor in the sericultural industry is the production of cocoons. This depends mainly upon the way of rearing the silk-worms. If the method of rearing is bad, generally the worms become weak, puny and liable to diseases, as a result of which the crop cannot be expected to be good. It is usually reduced to $\frac{2}{3}$ or $\frac{1}{2}$ and it may even happen that the rearer gets nothing at all, and has to throw away all the worms. In addition to these difficulties the worms mounted after such rearings usually spin cocoons far inferior to those spun by the worms reared perfectly. Besides many worms will die on the chandrikes before spinning and many die inside the cocoons after spinning. The dead worms will spoil the good cocoons; especially the cocoons with dead worms inside spoil the other cocoons in the course of harvesting, weighing, packing and transporting, etc., thus greatly increasing the proportion of inferior cocoons. The result is not only a loss to the rearer but also to the reeler as the latter has to spend more to get less quantity of inferior silk.

An average yield of 30 lbs. of green cocoons for 100 layings of eggs is considered satisfactory by the raiyats in Mysore. Of course he gets less than this frequently, and occasionally, that is to say once in every two or three times, he loses the entire crop. I have known raiyats complaining that they only get every alternate crop. Should a raiyat be satisfied with a yield of 30 lbs. for 100 layings for good crops, and reconcile himself to frequent, nay even to successive, failures?

In fixing a standard, we must consider the nature of the Mysore silk-worm, and from my experiments and experience, I find that 100 layings of this worm, after allowing for a loss of 20 per cent in the course of rearing ought to yield about 25,000 cocoons, weighing about 45 or 50 lbs. This is the average. The maximum would be somewhere about 70 lbs. These results are based not on arithmetical calculations but on actual and repeated experience. It is within the power of every raiyat to get 45 or 50 lbs. for 100 layings on the average, instead of 30 lbs which is considered satisfactory now, and to get this, he has only to rectify some of the faults in his methods of rearing. These faults can be easily rectified, and I shall proceed to describe them and suggest right methods.

The first thing that strikes one at the sight of the rearing of the raiyat is the overcrowding of the worms in a tray. The space given by the rearer for the worms of 100 layings is about $\frac{1}{4}$ to $\frac{1}{3}$ square foot at the time of brushing, 2 to 3 square feet at the end of first age, 5 to 6 square feet at the end of 2nd age, 10 to 12 square feet at the end of 3rd age, 24 to 30 square feet at the end of fourth age and 40 to 60 square feet at the time of mounting in most cases. This is an extremely small amount of space for the worms in the different ages. Let

Holidays	English Dates	Days of week	Chandramana Dates	Tithies in Ghaliges and Vighaliges		Nakshatrams in Ghaliges and Vighaliges	
G. M.						BHADRAPADA	
	1	Monday ..	6	Shashti	.. 24 9	Rohini	.. 10 5
	2	Tuesday ..	7	Saptami	.. 27 32	Mrigasira	.. 15 47
	3	Wednesday.	8	Ashtami	.. 30 5	Aridra	.. 19 54
	4	Thursday ..	9	Navami	.. 31 25	Punarvasu	.. 23 0
	5	Friday ..	10	Dasami	.. 31 37	Pushya	.. 24 57
	6	Saturday ..	11	Ekadasi	.. 30 34	Aslesha	.. 25 40
	7	Sunday ..	12	Dvadasi	.. 28 16	Makha	.. 25 10
	8	Monday ..	13	Trayodasi	.. 24 48	Pubba	.. 23 30
	9	Tuesday ..	14	Chaturdasi	.. 20 18	Uttra	.. 20 49
10	Wednesday.	30	● Amavasya	.. 14 55	Hasta	.. 17 14	
ASVIJA							
G.	11	Thursday ..	1	Padyami	.. 9 0	Chitta	.. 12 11
	12	Friday ..	2-3	Bidige	.. 2 40	Svati	.. 8 40
				Tadige	.. 53 30		
	13	Saturday ..	4	Chouti	.. 49 44	Visakha	.. 4 4
						Anoradha	.. 55 28
	14	Sunday ..	5	Panchami	.. 43 51	Jeshta	.. 55 30
	15	Monday ..	6	Shashti	.. 38 36	Moola	.. 52 14
	16	Tuesday ..	7	Saptami	.. 34 15	Poorvashadha	.. 49 52
	17	Wednesday.	8	Ashtami	.. 30 57	Uttrashada	.. 48 37
	18	Thursday ..	9	Navami	.. 28 51	Sravana	.. 48 33
G.	19	Friday ..	10	Dasami	.. 27 58	Dhanishta	.. 49 41
	20	Saturday ..	11	Ekadasi	.. 28 20	Satabhisha	.. 52 2
	21	Sunday ..	12	Dvadasi	.. 29 55	Pooravabhadra	.. 55 30
	22	Monday ..	13	Trayodasi	.. 32 34	Uttrabhadra	.. 59 55
	23	Tuesday ..	14	Chaturdasi	.. 36 5	Revati	.. 60 10
	24	Wednesday.	15	O Pournami	.. 40 18	Revati	.. 5 17
	ASVIJA						
	25	Thursday ..	1	Padyami	.. 44 55	Asvini	.. 11 0
	26	Friday ..	2	Bidige	.. 49 41	Bharani	.. 16 58
	27	Saturday ..	3	Tadige	.. 54 20	Krittike	.. 22 56
28	Sunday ..	4	Chouti	.. 58 34	Rohini	.. 27 37	
29	Monday ..	5	Panchami	.. 60 10	Mrigasira	.. 33 34	
30	Tuesday ..	5	Panchami	.. 1 52	Aridra	.. 38 6	
31	Wednesday.	6	Shashti	.. 4 24	Punarvasu	.. 41 28	

MONTHLY NOTES.

The month for the sowing of the *hingar* crops, such as hingar jola, the various grams, coriander, wheat, cheap grains like *baragu* or *samé*, etc., on dry lands.

On wet and garden lands, potatoes, Cambodia cotton and the various garden crops can be sown.

In some parts of the State this is also one of the seasons for the planting of

Yogams	Feasts, Festivals, Government Holidays and Rainfall according to Nakshatrams	Dates of Cattle Fairs, Cattle Shows and Agricultural Exhibitions and other useful notes
BHAHULA.		
Vyatipata ..	....	
Varigha ..	....	
Parigha ..	Madhyashtami.	
Siva ..	Hasta Rain 3rd pada.	
Siddha ..	....	
Sadhya ..	....	
Subba ..	Hasta Rain 4th pada.	
Sukla ..	....	
Bramha ..	Mahalaya Amavasya. Chi-	
Mahendra ..	tta Rain 1st pada. Akhiri-	
	chaharshumba on	
SUDDHA.	10th.	
Vaidruti ..	Commencement of Dasara.	
Vishkambha, Preeti ..	....	
Ayushman ..	....	
Sowbhagya ..	Lalitapanchami. Chitta	
	Rain 2nd pada.	
Sobhana ..	Sarasvati Pooja.	
Atiganda ..	16th to 24th Dasara Holi-	
	days.	
Sukarma ..	Durgashtami. Chitta Rain	
	3rd pada.	
Dhriti ..	Mahanavami.	
Soola ..	Vijayadasami.	
Ganda ..	Chitta Rain 4th pada.	
Vridi ..	....	
Druva ..	....	
Vyaghata ..	Birthday of Mahomed.	
Harsha ..	Svati Rain 1st pada.	
BAHULA.		
Vajra ..	....	
Siddhi ..	....	
Vyatipata ..	Svati Rain 2nd pada.	
Varigha ..	....	
Parigha ..	....	
Siva ..	Svati Rain 3rd pada.	
Sidda ..	....	

sugar-cane ; this is done under tanks which are known to get very good supplies almost unfailingly during the heavy *hasta*, *chitta* rains of this month, which will carry the crop through the hot months, when the cane will be in full growth and would require heavy irrigation. This planting has the advantage of enabling the raiyat to mill cane long before the general milling season begins, and to put jaggery on the market when prices rule high—(*vide* notes under April in *re* seed setts for planting).

us compare this with the practice in other countries. In Japan the brushed worms of 28 layings are given 1 square foot at the time of brushing, 6 square feet at the end of first age, 12 square feet at the end of 2nd age, 30 square feet at the end of 3rd age, 60 square feet at the end of 4th age and 90 square feet in the 5th age. In Italy and France the rearers are giving almost the same space in the different ages though they brush slightly closer as the eggs are in a free condition.

Looking at the tray of a raiyat who has newly brushed worms one will find something like a sheet of black velvet or chimney soot spread on it. This mass consists of thousands and thousands of silk-worms that are unfortunately treated almost as inanimate things in spite of their having individual life, simply because of their tiny sizes. Yet they have strong vitality and a vigorous capacity for growth so that they are able to increase to two or three times in a day and to reach 14 or 15 times their weight at the end of the 1st age. For this wonderful capacity to have full scope, the worms must be given space and food and the failure to give these is the first great fault of the Mysore raiyat.

The worms are kept in a little space, and a small quantity of food quite covers them; so that one sees the shredded leaves quite covered with thousands of hungry worms immediately after each feeding. This defect directly prevents the silk-worms from making perfect development and rapid progress. This is one of the great reasons why the cocoon produced by the rearer is always poorer than it ought to be and also his rearing takes so long. This error begins with the brushing and persists throughout the rearing, till they mount. Generally the treatment is worst in the younger age; because with the advancement of the age, the individual body of the worm becomes distinct and one can observe the state and the movements of the worms easily as a result of which the rearer will begin to feel some interest in them; but the worms that are once spoiled in the younger age have almost no prospect of recovering. Though the Mysore worm is by nature strong, this cruelty makes it weak, and liable to disease; many worms die in the course of the rearing, and those which survive spin poor cocoons.

The proper treatment only requires a little knowledge and care, and does not cost much. Closely connected with the defect in spacing is the great defect in the way of feeding. In feeding the worms the most important points are the quantity of food given at one time and the number of feedings given in a day. The former depends to some extent on the amount of space given to the worms; as the space given by the rearers is too narrow, so the quantity of leaves fed is always too little. The points to keep in mind are these; the leaves must be in good condition for silk-worm food. There must be enough for each worm. There must not be too much, for the excess dries up and becomes unfit for food and is therefore wasted. Directly one feeding is eaten up another should be given. In short the feeding should be so regulated that the worms should get enough fresh leaves whenever they want to eat. It is a calamitous mistake to think that if you give a large quantity once for all you can dispense with frequent feedings. Silk-worms must eat at very short intervals throughout the day and cannot consume sufficient quantity at one time to be able to store up enough nourishment for several hours.

Another very bad feature of the raiyats' rearing is that so many diseased worms are allowed to remain in the tray with healthy ones. It is easy to understand that in a rearing which has the two defects noticed above — overcrowding and insufficient food — there are many diseased worms but why are they not picked out and thrown away? They are of no possible use and in due course the healthy worms also contract the disease and losses result.

I must here mention one more cause of insufficient nutrition and disease, namely, bad quality or bad condition or unsuitable nature of leaves. The worms do not eat such leaves unless driven by extreme hunger, and they sicken and die. Dusty or wet leaves, or leaves which are too tender or too ripe for the age of the worm, are in this class.

In the course of rearing, the worms require the greatest care during the time of moulting. If the climate at that time is quite suitable and the rearing is all right the worms will generally go to moult uniformly without any particular trouble; but with indifferent rearing and unsuitable weather conditions, the worms will often go to moult quite ununiformly causing great confusion to the rearer. The rearer will not know whether to stop the feeding as some worms will still be eating in spite of the majority being under moult. In the meantime some advanced worms will come out of moult before the late worms go to moult, so that it may happen that in the same tray there are worms which have not gone into moult, worms in moult, and worms which have come out of moult. The rearer feels hopelessly puzzled. The same trouble may occur either at the time of the worms going into moult, or coming out of moult. The matter requires quick decision and common sense, but a few directions based on experience may be useful.

(i) Never give feeding to worms which are not in moult in the same tray where there are many worms in moult.

(ii) If the worms which have not yet gone to moult are a very small part of the whole, and all the others have gone into moult, neglect those which have not gone into moult, and stop feeding.

(iii) If a very large number of worms have not yet gone into moult, and you cannot afford to reject them, separate them from the tray by means of using a thin layer of husk and a net, and a thin feed. Then keep them in a different tray in a warm place and feed them up carefully, to hasten their progress.

(iv) In case of coming out of moult also, if only a few worms remain in moult they may be neglected, and feeding given. If a large number still remain behind, the small number which have come out of moult may wait for feeding till the others come out. If a very large number come out they should be separated.

(v) In all cases, the late worms should be given special care in food and warmth to make their growth more rapid, so that they may catch up the other worms.

To rear silk-worm perfectly it is quite essential to pay attention to the season for the rearing. However good the seed, excellent and plenty the supply of leaves, and skilful the treatment may be, still if the season for the rearing is not proper, one cannot expect any satisfactory result. There are often certain seasons quite unsuited for conducting rearings; among them extremely hot and very damp seasons are

Holidays	English Dates	Days of week	Chandramana Dates	Tithies in Ghaliges and Vighaliges	Nakshatrams in Ghaliges and Vighaliges
					ASVIJA
	1	Thursday ...	7	Saptami ... 5 51	Pushya ... 43 43
	2	Friday ...	8	Ashtami ... 6 6	Aslesha ... 44 44
	3	Saturday ...	9	Navami ... 5 5	Makha ... 44 32
	4	Sunday ...	10	Dasami ... 5 5	Pubba ... 43 5
			11	Ekadasi ... 56 55	
	5	Monday ...	12	Dvadasi ... 55 12	Uttra ... 40 35
	6	Tuesday ...	13	Trayodasi ... 48 49	Hasta ... 37 11
G.	7	Wednesday	14	Chaturdasi ... 43 48	Chitta ... 32 9
	8	Thursday ...	30	●Amavasya ... 37 39	Svati ... 28 40
					KARTIKA
G.	9	Friday ...	1	Padyami ... 31 3	Visakha .. 24 3
	10	Saturday ...	2	Bidige ... 24 50	Anoradha .. 19 35
	11	Sunday ...	3	Tadige ... 19 1	Jeshta .. 15 30
	12	Monday ...	4	Chouti ... 13 54	Moola .. 12 5
	13	Tuesday ...	5	Panchami ... 9 38	Poorvashadha .. 9 30
	14	Wednesday	6	Shashti ... 6 26	Uttrashadha .. 8 2
	15	Thursday ...	7	Saptami ... 4 26	Sravana .. 7 33
	16	Friday ...	8	Ashtami ... 3 40	Dhanishta .. 8 30
	17	Saturday ...	9	Navami ... 4 13	Satabhisha .. 10 34
	18	Sunday ...	10	Dasami ... 5 57	Poorvabhadra .. 13 48
	19	Monday ...	11	Ekadasi ... 8 44	Uttrabhadra .. 18 0
	20	Tuesday ...	12	Dvadasi ... 12 24	Revati .. 22 29
	21	Wednesday	13	Trayodasi ... 16 42	Asvini .. 28 39
	22	Thursday ...	14	Chaturdasi ... 21 25	Bharani .. 34 35
	23	Friday ...	15	○Pournami ... 26 14	Krittike .. 40 34
					KARTIKA
	24	Saturday ...	1	Padyami ... 30 55	Rohini .. 46 22
	25	Sunday ...	2	Bidige ... 35 7	Mrigasira .. 51 44
	26	Monday ...	3	Tadige ... 38 39	Aridra .. 56 19
	27	Tuesday ...	4	Chouti ... 41 6	Punarvasu .. 59 54
	28	Wednesday	5	Panchami ... 42 43	Pushya .. 60 10
	29	Thursday ...	6	Shashti ... 43 3	Pushya .. 2 12
	30	Friday ...	7	Saptami ... 42 0	Aslesha .. 3 30

MONTHLY NOTES.

A few days before harvesting ragi, go over the field and select and harvest separately all ear-heads which are large in size and have many spikes, say, more than six in number. Dry and thresh them separately and preserve carefully for seed. This seed will give you plants with large ear-heads with many spikes and therefore, a much bigger yield than unselected seed.

On wet lands reserved and being prepared for sugarcane, green manure crops

Yogams	Feasts, Festivals, Government Holidays and Rainfall according to Nakshatrams	Dates of Cattle Fairs, Cattle Shows, and Agricultural Exhibitions and other useful notes	
BAHULA.			
Sadhya ..	.....		
Subha ..	.....		
Sukla, Bramha ..	Svati rain, 4th pada.		
Mahendra ..	Smaratha Ekadasi.		
Vaidruti ..	Vaishnava Ekadasi.		
Vishkambha ..	Visakha rain, 1st pada.		
Preeti ..	Narakachaturdasi, Dipavali		
Ayushman ..	Kadereswara Vratam.		
SUDDA.			
Sowbhagya ..	Balipadyami, Visakha rain 2nd pada.		
Sobhana, Atiganda ..	.....		
Sukarma ..	.....		
Dhriti ..	.....		
Soola ..	Visakha rain, 3rd pada.		
Ganda ..	.....		
Vridhbi ..	.....		
Dhruva ..	Visakha rain, 4th pada.		
Vyaghata ..	.....		
Harsha ..	.....		
Vajra ..	Anoradha rain, 1st pada.	As soon as the rains cease, spraying against green bug on coffee should be commenced on all infected estates and continued until the picking season. They will be observed only on a few trees to begin with, and if these are sprayed, the severity of infestation will be considerably reduced. The infestation will start with an ant's nest in the ground or on the tree as a centre. Spraying should be continued after the rains until the monsoon sets in.	
Siddhi ..	.....		
Vyatipata ..	.....		
Varigha ..	.....		
Parigha ..	Vyasa Pournami, Anoradha rain, 2nd pada.		
BAHULA.			
Siva ..	.....		
Siddha ..	.....		
Sadhya ..	Anoradha rain, 3rd pada.		
Subha ..	.....		
Sukla ..	.....		
Bramha ..	Anoradha 4th pada.		
Mahendra ..			

can be sown (*vide* notes under May). The Red Mauritius and other new varieties of sugarcane should be planted about the time and applications for seed setts should be made early.

On tobacco fields, the crop planted in late September or early October will need topping and removal of suckers.

Dharwar—American cotton (*Doddahatti*) sown in May-June will be ready for a first picking; and in picking, care should be exercised, as mentioned in the notes under March. The best plants, *i. e.*, those bearing profusely should be marked down too, and their cotton should be picked and stored separately. This should later be ginned at home and the seed preserved for sowing next season.

the worst and they should be avoided. Especially when weather conditions are both hot and damp it is quite hopeless to rear successfully. When such seasons can be anticipated one should never attempt to have a rearing. He should reserve his resources for a more suitable season. In short the suitability of the season is of such supreme importance that even among suitable seasons one should make a further study and select the best for putting out his utmost effort and resources.

Obviously disease-free eggs are necessary for a good crop but a disease-free rearing room is also equally necessary. Hence the raiyat should never forget to disinfect his rearing chamber and appliances, etc. Of course by using the disease-free layings he can escape from the havocs of the disease that will come through the mother. But that has no connection with the disease that would come either through the mouth or any other way of contagion while feeding. These can be prevented mainly by disinfection. Especially, if a crop should have been lost through disease, disinfection is quite necessary. For disinfection, the rearer has to spend something which is however not a very heavy tax on him. Even if he does not carry out the disinfection during each rearing, he ought at least to do so once after every third or fourth rearing, according to his ability. But he should not neglect to keep the rearing room and the appliances always clean. He should very often expose the rearing appliances to the sun soon after each rearing and before commencing another. In addition to these he should wash all the articles, stands and the room well before and after every rearing. This is also one of the ways of getting rid of the source of disease. Exposing the articles to the sun is a specially effective means of disinfection. One easy way of disinfecting is to burn sulphur in the rearing room, so that the room gets full of fumes. As the fumes take time to kill the germs of disease, care must be taken to stop up all cracks and openings by pasting paper, so as to keep the sulphur fumes in as long as possible. But the safest thing to do is to wash all appliances well with clean water and dry them in the sun.

Finally I want to give some instructions to the rearer in the mounting of worms and harvesting of cocoons. To begin with, in mounting, the rearers in the State generally place far more worms in a chandrike than there is room for them. The only suitable place for the worm to spin the cocoon in a chandrike is the angle at the bottom of the circular strip inserted inside. The inter space between the strips is too broad for the silk worms to stretch the silk filaments which they have to do before building the cocoon and hence they do not serve the purpose at all. The worms are therefore compelled to gather in the corners mentioned above; moreover the number of worms allowed in one square foot reaches to about 300 to 400 in most cases and all these not having convenient space, build over one another wasting their silk, and producing all sorts of deformed and abnormal cocoons. The colour and lustre and reelable nature of the cocoons are all damaged. In addition to this there are also very many diseased worms in the cocoonage as a result of the bad rearing and negligence to pick out diseased worms. The exudations from these ruin many cocoons around them either before or after spinning.

Moreover the dead worms found after spinning are never separated from the good cocoons at the harvest or sale. Hence in the processes of

weighing, packing, transmitting, stifling, drying, preserving the cocoons, etc., the bad cocoons are staining the good cocoons around them. It need hardly be said that cocoons with dead pupæ, thin-layered, stained, flattened and irregular shaped cocoons are all far less in value in the reeling. If these are mixed with good cocoons and cooked together while reeling, the cooking will be quite ununiform and much trouble is caused in taking out the thread ends, thus involving a heavy labour in reeling. After great trouble in the basin, and spoiling the quality of the silk these cocoons come out as waste.

The only remedy is that the rearer should either decrease the number of worms allowed in the chandrike or increase the suitable place for spinning by putting the circular strip (the *phool* or the *huvu* or the flower as it is called) closer together. In old chandrikes, twigs or straw or weeds might be disposed in the interspaces to furnish corners in which the worms can conveniently stretch their filaments and spin good cocoons. The fault caused by negligence in separating the stained and dead cocoons can be avoided without any extra labour, simply with the little care of keeping the inferior cocoons, mostly stained, apart from the good cocoons.

The rearers mix good cocoons with bad to avoid losing weight and because the reelers tolerate this mixing. Neither the rearers nor the reelers would do it if they knew what was good for themselves. It is very short-sighted to spoil the good name of the silk of Mysore in this way, and in the result neither the rearer, nor the reeler gains any real profit by the bad practice.

Another great mistake committed by the rearer is to remove all the cocoons too early from the chandrikes. The rearer exposes the mounting worms to sunlight so as to make the worms spin the cocoons early and then removes the cocoons after only a day, while many of the silk worms at that time inside the cocoons are before pupation and even the earliest worms are just finishing pupation. So the cocoons handled at such a time are spoiling the innermost layers of the cocoons as the pupæ just transformed from the worms are very soft and delicate and are liable to be crushed even at the least rough treatment and thus stain the inner layings with the blood. The layers that are stained with the blood become unsuitable for reeling and cause great trouble even though they are reeled with great patience. This again is due to a desire to get as much weight as possible, even though there is real loss both to the rearer and reeler and to the country. The purchasers of the cocoon should be careful and they would act better to reduce the price for such cocoons and pay more for the cocoons that have been allowed to remain in the chandrikes till perfect pupation.

THE LENDING LIBRARY.

Arrangements have been made recently to set apart a selection of books from the departmental library for the purpose of lending to persons interested in agriculture and allied subjects. A revised catalogue of these books giving information as to the conditions under which they may be borrowed can be obtained free of charge from the Librarian, Department of Agriculture, Bangalore,

Holidays	English Dates	Days of week	Chandramana Dates	Thithies in Ghaliges and Vighaliges	Nakshatrams in Ghaliges and Vighaliges
					KARTIKA
	1	Saturday ..	8	Ashtami ... 39 41	Makha .. 3 33
	2	Sunday ..	9	Navami .. 36 14	Pubba ... 2 22
	3	Monday ...	10	Dasami ... 31 45	Uttra ... 0 15
					Hasta ... 57 2
	4	Tuesday ...	11	Ekadasi ... 26 4	Chitta ... 53 16
	5	Wednesday ..	12	Dvadasi ... 20 30	Svati ... 48 49
	6	Thursday ...	13	Trayodasi .. 14 16	Visakha ... 44 11
	7	Friday ..	14	Chaturdasi ... 7 55	Anoradha ... 39 36
	8	Saturday ..	30-1	● Amavasya ... 1 44	Jeshta ... 35 23
					MARGASIRA
				Padyami ... 54 6	Moola ... 31 49
	9	Sunday ..	2	Bidige ... 50 49	
	10	Monday ...	3	Tadige .. 46 39	Poorvashada ... 29 2
	11	Tuesday ..	4	Chouti ... 43 31	Uttrashada .. 27 17
	12	Wednesday ..	5	Panchami .. 41 53	Sravana ... 26 40
	13	Thursday ..	6	Shashti .. 40 18	Dhanishta ... 27 15
	14	Friday ...	7	Saptami .. 40 59	Satabhisha ... 29 4
	15	Saturday ...	8	Ashtami .. 43 52	Poorvabhadra ... 32 2
	16	Sunday ..	9	Navami .. 46 47	Uttrabhadra .. 36 2
	17	Monday ..	10	Dasami ... 50 36	Revati .. 40 54
	18	Tuesday ...	11	Ekadasi ... 57 3	Asvini .. 46 25
	19	Wednesday ..	12	Dvadasi .. 59 54	Bharani ... 52 20
	20	Thursday ...	13	Trayodasi ... 60 10	Krittike ... 58 23
	21	Friday ..	13	Trayodasi ... 4 46	Rohini ... 60 10
	22	Saturday ...	14	Chaturdasi .. 9 27	Rohini .. 4 10
	23	Sunday ...	15	○ Pournami ... 13 41	Mrigasira ... 8 36
					MARGASIRA
G.	24	Monday ...	1	Padyami ... 17 7	Aridra .. 14 17
	25	Tuesday ..	2	Bidige ... 11 40	Punarvasu .. 18 9
	26	Wednesday ..	3	Tadige .. 21 2	Pushya ... 20 53
	27	Thursday ...	4	Chouti ... 21 3	Aslesha .. 22 28
	28	Friday ..	5	Panchami .. 20 8	Makha .. 22 50
	29	Saturday ..	6	Shashti .. 17 48	Pubba .. 21 59
	30	Sunday ...	7	Saptami .. 14 23	Uttra ... 19 5
	31	Monday ...	8	Ashtami .. 9 49	Hasta ... 17 2

MONTHLY NOTES.

Soon after the dry crop of ragi or jola is harvested, the field should be ploughed up immediately. In this way, the moisture in the lower layers of the soil will be protected from the drying action of the sun and wind. The soil will be in a fit condition to receive and soak up the early rains of April and May, and thereby to enable us to start *mungar* ploughing early, or sow an early *mungar* crop like those specified in the notes under May (q. v.) The soil will weather well, which as many raiyats know, is equivalent to

Yogams	Feasts, Festivals, Government Holidays and Rainfall according to Nakshatrams	Dates of Cattle Fairs, Cattle Shows and Agricultural Exhibitions and other useful notes
BAHULA. Vaidruti ... Vishkambha Preeti ... Ayushman ... Sowbhagya .. Sobhana ... Atiganda .. Sukarma ... Dhriti ..	Jeshta Rain 1st pada. Jeshta Rain 2nd pada.	
SUDDHA. Soola ... Ganda ... Vridhhi .. Dhruva ... Vyaghata .. Harsha ... Vajra ... Siddhi .. Vyatipata ... Varigha .. Parigha ... Siva ... Siddha ... Sadhya .. Subha .. Sukla ..	Jeshta Rain 3rd pada. Durbar day, Jeshta Rain 4th pada. Moola Rain 1st pada. Moola Rain 2nd pada. Moola Rain 3rd pada.	
BAHULA. Bramha ... Mahendra ...* Vaidruti ... Vishkambha ... Preeti ...† Ayushman ...† Sowbhagya ... Sobhana ...	Christmas Holidays from 24th to 31st Dec. 1923. *Moola Rain 4th pada. Maddoorammanna Jatra, Upparahalli, Hoskote Taluk. †Poovashadha Rain 1st pada.	

applying manure, the roots of weeds will be killed, and the pupæ of insects destroyed.

This ploughing is a very important operation for dry lands, for in a year of poor rainfall it will help to tide the crop over the drought. It should therefore, be attempted notwithstanding difficulties, such as the presence of the *akkadi* or subordinate crop, the hardness of the soil, etc. Immediately after harvest, the soil will be moist enough to plough or disc, and, at that time, it will be also possible to dodge the rows of the mixed crop in ploughing.

HOW TO TAKE AND SEND SAMPLES OF SOILS AND MANURES FOR ANALYSIS.

Soils.—Select five or six different places, not near each other, in a field of about an acre or so in extent, scrape the surface clean of all vegetation and accumulation of decaying leaves, etc. At each place dig a hole about 18 inches square with a sharp spade or other suitable implement such as a *muntee*, to a depth of 18 inches. The walls of this hole should be smooth and perpendicular. Remove the soil to the depth of 8 inches from the sides of the hole in a slice about 4 inches thick, or the sample may extend to the depth indicated by a change of colour in case such change is between 8 and 12 inches.

Collect, break up all lumps with a wooden mallet, and mix all the samples from the five or six holes, remove all large stones, sticks, etc. Stones of the size of a pea and smaller, and fine roots should not be removed. After the heap collected is well mixed, take about 10 lbs. of soil and put it into a clean cloth or canvas bag and tie up the mouth securely. Put the bag in a clean wooden box and forward. Each bag should be distinctly labelled, and a duplicate label put inside the bag.

The following information should also be supplied along with the samples :—

- (a) The management and rotation of crops in previous years.
- (b) The character of the customary manuring, whether only cattle manure is used, or oil cakes and such other manures also in addition.
- (c) The average amounts of each of the more important crops yielded by the field.
- (d) The character of the sub-soil, whether sandy or clayey, to a depth of about 3 feet at least.
- (e) Level of ground water, character of natural vegetation and physical character of the soil.
- (f) Local opinion with regard to fertility, etc.

Manures.—Take a small and equal quantity from near the centre of each bag or heap with a long-handled scoop or ladle, mix well and send about 2 to 5 lbs.

In case of oil cakes, information about the quantity locally available should also be furnished.

In case it is found difficult to get such samples from accumulations of cattle manure in a large pit or heap, the sample can be easily collected when the manure is carted out into the fields and put there in small heaps. A small quantity from each heap can then be easily taken. Mix well all samples thus got and send about 20 lbs. in a suitable box.

All available information with regard to the source of manure whether from milch cows or working bullocks, and the way in which the animals are fed *e. g.* fed only on straw or getting oil-cakes and bran in addition should also be furnished.

HOW TO SEND DISEASED SPECIMENS FOR EXAMINATION.

When crops appear to be attacked by some sort of disease and a careful search does not reveal any insect or insects attacking them, it is to be presumed that they are effected by parasites of vegetable nature. In all such cases, material should be forwarded to the Director of

Agriculture for identification of the organism causing the disease. The following instructions are given for the best method of sending such materials:—

Entire plants, or if they are very big, parts of plants showing the early stage, the late stage, the final attack, and the condition to which the plant is ultimately reduced, should be carefully selected and dried separately between folds of dry blotting paper or even old newspapers. These papers must be removed and fresh ones put in for two or three days, and when the specimens are sufficiently dry, they must be sent, as they are between the blotting paper. A small quantity of the material should also be sent in a wide-mouthed bottle containing weak brandy or country spirit, and packed in a wooden case to avoid breakage. All parcels should be sent to the Director of Agriculture, Bangalore, together with a letter giving full particulars as to the nature of the outbreak and its present condition. Arrangements will then be made to give instructions regarding the best method of treatment, and in serious cases, an officer of the Department will be sent to help the cultivators concerned.

RULES GOVERNING THE SHORT COURSES TO BE HELD ON THE HEBBAL AND MARATHUR FARMS.

1. Raiyats and agricultural labourers will be received on the Hebbal and the Marthur farms for periods not exceeding one month under the following conditions:—

(a) Government will bear half the expenses of the railway fare to and from the Farm. Of the remainder, a portion not exceeding quarter of the total may be met from the Taluk Progress Committee funds, the balance to be met by the raiyats, or from private subscription.

(a-1) An allowance of one anna per mile for road journeys made by raiyats attending the short courses will also be paid by Government in cases where they are really poor or are recommended by the Taluk Progress Committees, or some responsible person or authority.

(b) Accommodation will be provided free of charge to the raiyats who are expected to make their own arrangements for food, provided that in the case of persons attending the Marthur farm, who have received no financial help to meet the cost of travelling under clause (a) of the above rule, they may be given their boarding charges in the same proportion from the respective sources mentioned in that clause.

2. During the time the raiyats and labourers work on the farms, they will be paid at the prevailing local rates for labour.

In cases where landlords wish to send their own raiyats or labourers, application for admission may be made by them direct to the Director of Agriculture. The same conditions apply to cases where raiyats wish to come on their own initiative and receive no assistance from local bodies.

Where local bodies bear part of the expenses, the selections should be made by them.

The Amildars of taluks and Chairmen of Taluk Progress Committees may intimate direct to the Managers of the farms, at least one month before the commencement of each course, the number of raiyats who have agreed to attend the course.

RAHUKALAM AND GULIKAKALAM

Day of week	Rahukalam	Gulikakalam
Sunday	4-30 to 6 p.m.	3 to 4-30 p.m.
Monday	7-30 to 9 a.m.	1-30 to 3 p.m.
Tuesday	3 to 4-30 p.m.	12 to 1-30 p.m.
Wednesday	12 to 1-30 p.m.	10-30 to 12 noon
Thursday	1-30 to 3 p.m.	9 to 10-30 a.m.
Friday	10-30 to 12 noon	7-30 to 9 a.m.
Saturday	9 to 10-30 a.m.	6- to 7-30 a.m.

**PUBLICATIONS OF THE DEPARTMENT OF AGRICULTURE.
MYSORE STATE, BANGALORE.**

ANNUAL REPORTS.

Annual Report for the year 1900-01.		Out of print.	
Do	do	1901-02	do.
Do	do	1902-03	do.
Do	do	1903-04	do.
Do	do	1904-05	do.
Do	do	1905-06	do.
Do	do	1906-07	do.
Do	do	1907-08	do.
Do	do	1908-09 to 1915-16. Out of print.	
Do	do	1916-17 to 1920-21 inclusive.	

CALENDARS.

	Rs. A. P.		
Hettal Agricultural School calendar 1918-19 to 1920-21			
Agricultural calendar for the years 1919 and 1920 in English and Kannada, each	0	1	0
Agricultural calendar for 1918 in Kannada only	0	1	0

BULLETINS.

GENERAL SERIES.

1. Green manuring in Mysore (English and Kannada). Out of print	...	0	8	0
2. Experiments on paddy cultivation (English and Kannada). Out of print	...	0	8	0
3. Report on Agricultural Education. Out of print				
4. Report on an Agricultural Tour in Europe, America and Japan during 1912-13. Out of print.				
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| 19. | Hand-book of Exhibits, Mysore Dasara Exhibition, 1917, in English only. Out of print. | | | | | |

20. How to Combat Coffee Borer. Out of print.
 21. Kamblihula in Kannada only. Out of print.
 22. The Drying of Areca nuts, in English only. Out of print.
 23. Kamblihula with black head, in Kannada only.
 24. Insect pest of earhead of *gidda* ragi, in Kannada only.
Out of print.
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only. Out of print.
 26. Methods of cultivating ragi, in Kannada only. Out of print.
 27. Methods of cultivating *bili* Jola and navane, in Kannada
only. Out of print.
 28. Methods of cultivating short duration paddies, in Kan-
nada only. Out of print.
 29. Borer hula, in Kannada only. Out of print.
 30. List of Books available for lending from the Library of
the Department of Agriculture in Mysore (English only)
 31. Cattle Breeding, in English and Kannada (Out of print.)
 32. Pony Breeding in English and Kannada (Out of print.)
 33. Transplantation of paddy, in Kannada only. (Out of print)
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In supersession of all previous circulars, the following implements will be sold by the Mysore Agricultural Department at rates quoted below, delivery at the Central Implement Depot, Bangalore. The prices are subject to fluctuation without notice.

No.	Particulars.	Prices.		
		Rs.	a.	p.
1.	Verity plough	45	0	0
2.	Kolar Mission No. 8 plough	28	12	0
3.	do No. 9 do	29	12	0
4.	Eureka plough	13	4	0
5.	Meston plough (Burn & Co.) Iron works only	10	8	0
6.	Kirlosker No. 9 plough	66	0	0
7.	do No. 100 do	62	0	0
8.	Six Shovel cultivator (Kolar mission)	14	0	0
9.	do do (C. I. Workshop)	15	4	0
10.	Moline three-lever Disc Harrow	260	0	0
11.	"Sultan" Sugar-cane Mill (Nahan Foundry) without standards.	Prices on application.		

SPARES.

12.	Cast body for Verity plough (local)	9	2	0
13.	Cast share for do	1	13	0
14.	Local landsides for do	1	13	0
15.	F. 4 steel share (imported) for K. M. plough	3	6	0
16.	F. 6 do do do	4	2	0
17.	C. I. W. steel share (local)	3	2	0
18.	Imported frog for K. M. plough	3	12	0
19.	do mould-board do	9	6	0
20.	do landside do	3	0	0
21.	Steel slip points (local)	0	12	6
22.	Spanners for K. M. plough	0	4	0
23.	Eureka share	0	14	0
24.	do reversible point $\frac{1}{4}$ " thick	1	6	0
25.	do do $\frac{3}{8}$ " do	1	14	0
26.	do bold and nut	0	3	0
27.	do spanner	0	2	0
28.	Syracuse plough share (imported)	2	0	0
29.	Bar points for New Bar share plough	1	8	0
30.	Cast shares (Burn & Co.) for meston plough	0	14	0
31.	Wooden beam and handle do	2	8	0
32.	Kirlosker No. 9 plough share without bolt and nut	2	12	0
33.	Spare shovels (tyres) for six shovel cultivator	1	8	0
34.	Spare discs for Moline three lever disc harrow	7	0	0
35.	Jaggery boiling round pans, joints welded	Price on application.		
36.	do square pans, joints revetted	115	0	0
37.	Skimming ladle, fine sieved	2	4	0
38.	do rough do	2	2	0
39.	Fine wove wire for ladles per sq. ft.	0	10	6
40.	Rough do do	0	8	6

